LONG BEACH MEMORIAL MEDICAL CENTER EXPANSION
VOLUME I, DRAFT ENVIRONMENTAL IMPACT REPORT
SCH NO. 2004081142

Prepared For:

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SECTION ES
EXECUTIVE SUMMARY

This Environmental Impact Report (EIR) analyzes the potential for significant environmental impacts in association with the Long Beach Memorial Medical Center Expansion (proposed project). The proposed project would occur within the City of Long Beach, County of Los Angeles, California.

The proposed project consists of a Master Plan of Land Uses that provides a conceptual framework for the reorganization of the six existing land uses: (1) inpatient medical facilities, (2) outpatient medical facilities, (3) mixed-use facilities, (4) utilities, (5) circulation, and (6) parking. Within this conceptual framework, six proposed project elements could be constructed within the next 5 to 10 years:

1. Todd Cancer Institute
2. Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building
3. Miller Children's Hospital—Pediatric Outpatient Building
4. Miller Children's Hospital—Link Building
5. Roadway Realignment
6. Parking Program

ES.1 EXISTING FACILITIES

The 54-acre Long Beach Memorial Medical Center campus (Campus) is completely developed and characterized by six general land uses: (1) inpatient medical facilities, (2) outpatient medical facilities, (3) mixed-use facilities (includes 51 residential units), (4) utilities, (5) circulation, and (6) parking. There are approximately 1,213,945 gross square feet of structures located within the Campus. There are two licensed hospitals within the Campus: the Long Beach Memorial Medical Center (LBMMC) and Miller Children's Hospital (MCH). These facilities are centrally located in the center of the Campus, north of 27th Street, east of Long Beach Boulevard, south of Columbia Street, and west of Atlantic Avenue. In addition to inpatient services, outpatient services are provided in structures located in the northern portion of the Campus.

ES.2 PROPOSED PROJECT

The proposed project consists of six distinct components:

1. Todd Cancer Institute
2. Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building
3. Miller Children's Hospital—Pediatric Outpatient Building
4. Miller Children's Hospital—Link Building
5. Roadway Realignment
6. Parking Program

ES.2.1 Todd Cancer Institute

The Todd Cancer Institute (TCI) would be located on the northwestern corner of the Campus, southeast of the intersection of Long Beach Boulevard and Spring Street on the existing 872-stall surface parking lot. The TCI building would provide comprehensive outpatient cancer services in a single facility designed for the unique requirements of cancer patients and their families. These services are currently provided in approximately 24 distinct locations distributed throughout the Campus and in nearby, leased facilities. The TCI building would also be designed to reinforce a sense of arrival to the northern edge of the Campus. Visitors would access the TCI from entry driveways on Pasadena Avenue. Outpatient cancer services would ultimately encompass approximately 125,930 gross square feet of new space constructed in two phases.

Landscaping would be provided along Long Beach Boulevard and Spring Street frontages consistent with City of Long Beach requirements. Landscaping within the Campus would be consistent with existing Campus landscaping. A healing garden would be developed adjacent to the TCI building. Amenities and plant selections would be sensitive to the needs of cancer patients and would accentuate the healing and medicinal properties of certain plants.

Phase I of the TCI would provide 83,630 gross square feet in a 54-foot-high, three-story building and an atrium featuring a 70-foot-high skylight. The building would be identified by two building signs reading "Todd Cancer Institute" and by ground-level monument signage. The Phase I portion of the building would require 418 parking spaces. It is anticipated that there would be a maximum of approximately 120 employees working in the building at one time. Phase I of the TCI is proposed to initiate construction in July 2005. Upon completion of Phase I in September 2006, the undeveloped portions of the site would accommodate approximately 701 parking stalls.

Phase II would provide a 42,300-gross-square-foot expansion in a new 33-foot-high, two-story horizontal addition. The Phase II portion of the building would require 212 parking spaces. Upon completion of Phase II, the undeveloped portions of the site would accommodate approximately 633 parking stalls. It is anticipated that there would be a maximum of approximately 60 additional employees working in the building at one time. Construction of Phase II of the TCI is contingent on the growth of outpatient cancer services, the needs of the Long Beach community, and philanthropy. The likely dates to initiate and complete construction are July 2010 through June 2011.

ES.2.2 Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building

The expansion of MCH, through the addition of a pediatric inpatient tower, would be located immediately adjacent to the existing MCH facility, northwest of the intersection of Atlantic Avenue and Memorial Drive. The existing land use at this location is an 86-stall, multilevel parking structure. The parking structure would be demolished to accommodate the proposed pediatric inpatient tower. Access to the pediatric inpatient tower would be provided on multiple floors of the existing MCH facility and by a new pedestrian entrance on the west facade of the building. At build-out, the MCH would provide approximately 205,250 gross square feet.

Phase I of the MCH pediatric inpatient tower would provide approximately 129,220 square feet of new space for pediatric surgical services, imaging, lobby, newborn intensive care services, and general pediatric inpatient care services. It is anticipated that there would be a maximum of approximately 310 employees working in the building at one time. Phase I would consist of a four-story building with one story below grade and three stories above grade. The highest point of the Phase I structure would be approximately 84 feet above grade. The building would be identified by three building signs reading "Miller Children's Hospital" and by ground-level monument signs. The Phase I portion of the building would require 144 parking spaces. Phase I of the new pediatric inpatient tower is proposed to initiate construction in October 2005, with completion in January 2008. Phase II would provide approximately 86,030 square feet in a four-story vertical expansion of the Phase I structure. The highest point of the combined Phase I and Phase II structure would be approximately 148 feet above grade. The Phase II portion of the building would require 192 parking spaces. Construction of Phase II is contingent on the growth of inpatient pediatric cancer services, the needs of the Long Beach community, and philanthropy. The likely dates to initiate and complete construction of Phase II of the MCH pediatric inpatient tower are January 2012 and June 2013, respectively.

Landscaping would be provided along Atlantic Avenue and 27th Street frontages consistent with City of Long Beach requirements. Landscaping within the Campus would be consistent with existing Campus landscaping.

A central plant building designed to support Phases I and II of the new pediatric inpatient tower would be constructed northwest of the intersection of Atlantic Avenue and 27th Street. The existing land use at this location is a small, wood-framed building referred to as the "WIC Building" and "Ranch House" on the southeastern portion of the surface parking lot located north of 27th Street. The uses currently provided at the Ranch House include women's, children's, and infant food and nutrition programs, and would be relocated elsewhere on the Campus prior to the initiation of demolition activities. Development of the central plant building within a portion of the existing surface parking lot would displace 14 parking spaces. The central plant building would consist of a single-level structure of approximately 3,500 square feet and approximately 5,000 gross square feet of open yard, plus eight parking stalls. Construction of the central plant building is proposed to begin in June 2006 and finish in August 2007. The central plant building would contain equipment and storage for the provision of emergency power, chilled water, and bulk medical oxygen for the inpatient tower. The central plant building would be staffed by existing engineering staff; therefore, no additional parking would be required for the central plant building. Vehicular access to the central plant building would be from 27th Street.

The inpatient pediatric tower would be served by the central plant building via a 1,000-linear-foot underground utility trench along the eastern edge of the Campus, parallel to Atlantic Avenue. Utility piping between the central plant building and the inpatient tower would be direct buried within a protected, slurry back-filled trench. The utility trench would be a permanent, underground utility conveyance that would not generate any additional demand for parking; therefore, no additional parking would be required for the utility trench.

ES.2.3 Miller Children's Hospital—Pediatric Outpatient Building

A new pediatric outpatient building would be located south of the existing MCH facility, west of Atlantic Avenue, and approximately midway between Columbia Street and 28th Street. The existing land use at this location is a portion of the surface parking lot located north of 28th Street. Approximately 43 parking spaces would be demolished to accommodate the proposed pediatric

outpatient building. Pedestrian access to the outpatient building would be provided from an entrance on the northwest facade of the building. The MCH outpatient building would provide approximately 80,000 gross square feet. The pediatric outpatient building would consist of a five-story, B-occupancy, medical office building housing an array of pediatric care clinics and support services. It is anticipated that there would be a maximum of approximately 140 employees working in the building at one time. The structure's ground floor would be located below grade, with the upper seven floors rising above grade. The highest point of the building would be approximately 84 feet above grade. The MCH pediatric outpatient building is proposed to initiate construction in October 2005 and finish construction in May 2007. The building would be developed as a shell building, with internal tenant improvements for MCH-operated services and private physician practices. Four types of uses and clinics are under consideration for the outpatient pediatric building: (1) dental clinic, (2) pediatric rehabilitation, (3) children's and specialty care clinic, and (4) support space, including physician's offices.

Landscaping would be provided along the Atlantic Avenue frontage, consistent with City of Long Beach requirements. Landscaping within the Campus would be consistent with existing Campus landscaping.

The pediatric outpatient building would require approximately 400 parking spaces. Construction of the pediatric outpatient building is contingent on the identification of funding, philanthropy, and lease agreements with private physician groups.

ES.2.4 Miller Children's Hospital—Link Building

A new mixed-use building connecting the pediatric inpatient tower and the pediatric outpatient building would be located southwest of the intersection of Atlantic Avenue and 28th Street. The existing land use at this location is the existing Memorial Drive access road that would accommodate the proposed inpatient tower. Access to the mixed-use building would be provided on multiple floors from the inpatient hospital to the north and the outpatient building to the south. Grade-level pedestrian entrances would also be provided on the east and west facades. The MCH link building would provide approximately 20,000 gross square feet. The link building tower would consist of a 50-foot-high, three-story building that would contain retail spaces, offices, and retail food service for the users of the adjacent inpatient tower and outpatient building. Nonresidential space would be provided. The structure's ground floor would be located below grade, with the upper three floors rising above grade. The MCH link building is proposed to initiate construction in July 2010 and finish construction in June 2011.

Landscaping would be provided along the Atlantic Avenue frontage, consistent with City of Long Beach requirements. Landscaping within the Campus would be consistent with existing Campus landscaping.

The mixed-use building would require 50 parking spaces. Construction of the link building is contingent on the identification of a funding source.

ES.2.5 Roadway Realignment

Vehicular and pedestrian circulation patterns would be improved through the realignment of selected internal roadways and through a signage and wayfinding program. Specifically, a 520-linear-foot section of the alignment of Patterson Street/Memorial Medical Campus Drive as it extends through the Campus would be realigned southward by approximately 300 feet from its

current intersection, at Atlantic Avenue near 28th Street on the east side of the Campus, to make a closer connection with the existing alignment of Patterson Street at Atlantic Avenue. As a result, the intersection of Atlantic Avenue and 28th Street would become a T-intersection. The roadway would consist of three site entry lanes and three site exit lanes with an automated traffic control gate for each lane. The present roadway is approximately 85 feet wide at Atlantic Avenue. The roadway would narrow to 40 feet where it transitions to the existing alignment of Patterson Street near Pasadena Avenue. The road curvature has a radius of approximately 500 feet to transition from Patterson Street to the existing roadway alignment. The roadway realignment would result in the loss of 195 parking spaces from the surface parking lot located north of 27th Street. The existing T-intersection at Atlantic Avenue and Patterson Street would be replaced by a signalized through intersection. The grading and realignment would be undertaken such that the roadway and curbs are adjusted to provide access to adjacent buildings at the first-floor level. The roadway realignment is proposed to initiate construction in July 2005 and finish construction in October 2005.

ES.2.6 Parking Program

A phased parking program would be designed to offset the 577 parking spaces permanently misplaced by the proposed project and accommodate the additional demand for 1,153 parking stalls resulting from the expansion project components and the additional 189 parking spaces that would be lost from construction of a parking structure within Lot K. It is anticipated that the phased parking program would consider the use of surface parking areas on property owned by the LBMMC, nearby off-site surface parking areas that could be leased by the LBMMC, and possible future construction of one or more parking structures when justified by total demand. All on-site parking would be developed in areas designated for interim or permanent use of parking in the Master Plan of Land Uses. This would include demolition of the 51 existing residential units to create surface parking (Lots Q, R, S, and T). If determined to be necessary, a multilevel parking structure capable of accommodating approximately 100 spaces per level would be sited in an area designated for long-term parking. Surface parking areas and structures would be landscaped. However, the LBMMC would apply for a code exception to the City of Long Beach landscaping requirements. All parking facilities constructed by the LBMMC would incorporate best management practices consistent with the requirements of the Regional Water Quality Control Board.

ES.3 AREAS OF KNOWN CONTROVERSY

This EIR addresses the areas of controversy known to the City of Long Beach and those raised by agencies, organizations, and the public during the scoping process for the proposed project. There are four primary areas of controversy that have been raised in relation to the proposed project:

1. The City of Long Beach is aware that the construction of a project of this size often generates impacts to ambient air quality from construction and operation. Section 3.2, Air Quality, analyzes the impacts to air quality from construction and operation of the proposed project. There are no significant anticipated impacts from operation of the proposed project. Mitigation measures have been specified that are capable, with the exception of nitrogen oxides (NOx), of mitigating all construction impacts to air quality to below the level of significance.

2. There were numerous concerns with the traffic and transportation impacts associated with the implementation of the proposed project. The City of Long Beach is aware that the implementation of the proposed project would impact 10 of the surrounding intersections, 3 of which cannot be mitigated to below the level of significance for the year 2008 planning horizon. The impacts to 5 of the 10 intersections would not be mitigated to below the level of significance for the year 2014 planning horizon. Section 3.11, Traffic and Transportation, discusses the impacts associated with implementation of the proposed project and includes feasible mitigation measures for intersections anticipated to result in significant impacts.

3. There are concerns related to the impacts associated with the required removal of existing parking to accommodate the proposed project. Section 3.11, Traffic and Transportation, includes discussion of the construction and operation impacts to parking for each element of the proposed project and includes a mitigation measure through the implementation of a parking program or comparable measure that provides sufficient parking to meet City of Long Beach Code requirements. Implementation of the mitigation measure for parking impacts would reduce impacts to below the level of significance.

4. There are concerns with the potential for contaminated soils located on the proposed project site. The proposed project site is located on a closed landfill site, which is listed on the California Integrated Waste Management Board's Solid Waste Information System (SWIS), and is within the area of an oil field. There is a possibility that contaminated soils remain in the artificial fill. Section 3.5, Hazards and Hazardous Materials, includes a detailed discussion of the potential impacts and includes mitigation measures that would reduce the potential for exposure of people or property to petroleum hydrocarbon–contaminated soils and water to below the level of significance. The mitigation measure requires that petroleum hydrocarbon–contaminated soils and water be tested, treated, and/or disposed consistent with all applicable local and federal statues and regulations. The City of Long Beach shall review plans and specifications for those elements of the proposed project to be constructed over unclassified fill: MCH pediatric inpatient tower Phase I and central plant building, MCH pediatric outpatient building, MCH link building, and the TCI Phases I and II. Sapphos Environmental, Inc. met with the Department of Toxic Substances Control (DTSC) on January 11, 2005, to present the proposed project and Health Risk Assessment (Appendix F, *Health Risk Assessment and Environmental Summary Report*). As a result of the meeting, LBMMC agreed to enter into a Voluntary Clean-up Agreement (VCA) with DTSC, which would serve as the mechanism for DTSC to complete the site characterization study and Health Risk Assessment. LBMMC will work directly with DTSC to finalize the mitigation measures specified in the EIR to ensure their adequacy in remediating health risks to below the level of significance. The City of Long Beach and the Office of Statewide Health Planning and Development shall ensure that the proposed project plans and specifications disclose the potential to encounter petroleum hydrocarbon–contaminated soils and water, and require the construction contractor to remove petroleum hydrocarbon–contaminated soils and water, in accordance with all applicable federal, state, and local statutes and regulations. The implementation of the mitigation measure described above would reduce impacts to below the level of significance.

ES.4 ISSUES TO BE RESOLVED

The analysis undertaken in support of the Initial Study[1] determined that there are several environmental issue areas related to the California Environmental Quality Act (CEQA) that are not expected to have significant impacts resulting from implementation of the proposed project. These issue areas are agricultural resources, biological resources, mineral resources, population and housing, and recreation. These issue areas, therefore, were not carried forward for detailed analysis in the EIR. The environmental issues identified in the Initial Study that need to be resolved in this EIR include aesthetics, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, National Pollution Discharge Elimination System, land use and planning, noise, public services, traffic and transportation, and utilities and service systems.

ES.5 SUMMARY OF IMPACTS

The analysis undertaken in support of this EIR has determined that impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, National Pollution Discharge Elimination System, land use and planning, noise, public services, and utilities and service systems can be mitigated to below the level of significance. However, there will be potential impacts related to air quality and traffic and transportation. Table ES.5-1, *Summary of Impacts*, presents potentially significant impacts related to each issue area analyzed that might result or can be reasonably expected to result from implementation of the proposed project. Table ES.5-1 also presents the measures that can mitigate the significant impacts and the level of significance after mitigation for each issue area analyzed in the EIR.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

TABLE ES.5-1
SUMMARY OF IMPACTS

Impact	Mitigation Measure	Level of Significance After Mitigation
Aesthetics		
Implementation of the proposed project has the potential to increase the amount of glare reflected from the structural elements.	***Aesthetics-1*** The potential increase in the amount of light and glare produced due to implementation of the security lighting provided for each element of the proposed project shall be reduced to below the threshold of significance by mandating the design type of the light fixtures, light standard height, and light fixture and standard orientation. Prior to completion of final plans and specifications for each structural element of the project, lighting plans and specifications shall be submitted to the City of Long Beach Department of Public Works for review to ensure that all light fixtures shall use glare control visors, arc tube suppression caps, and a photometric design that maintains 70 percent of the light intensity in the lower half of the light beam, or comparable design or technology, to achieve those criteria. This requirement shall apply to all elements of the project: Todd Cancer Institute Phases I and II; Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, and central plant building; MCH pediatric outpatient building; MCH link building; roadway realignment; and parking improvements. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Public Works.	Implementation of mitigation measure Aesthetics-1 would reduce significant impacts related to the potential increase in the amount of glare reflected from the structural elements to below the level of significance.
Implementation of the proposed project has the potential to increase the amount of light and glare due to increased security lighting.	***Aesthetics-2*** The potential increase in the amount of glare produced due to implementation of the structural elements of the proposed project shall be reduced to below the threshold of significance by mandating the design type of the reflective surface of the buildings, careful selection of exterior building materials, and window glass treatments. Prior to the completion of final plans and specifications for each structural element of the project, plans and specifications shall be submitted to the City of Long Beach Department of Public Works for review to ensure that the selection of exterior building materials and window glass treatments would not create uncomfortable levels of glare on public roadways or surrounding redirected areas for the structural elements of the project: Todd Cancer Institute Phases I and II, Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, MCH pediatric outpatient building, and MCH link building. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Public Works.	Implementation of mitigation measure Aesthetics-2 would reduce significant impacts related to daytime and nighttime light and glare to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Air Quality		
Implementation of the proposed project has the potential to impact air quality during construction and operation.	***Air-1*** As part of the request for the demolition permit for the 86-car parking structure, the WIC Building, and existing structures located at the proposed location of surface parking areas Q, R, S, and T, the Long Beach Memorial Medical Center shall demonstrate that asbestos-containing materials in these structures have been identified and adequately abated, or that the contractor has been informed of the need to identify and abate asbestos-containing materials consistent with the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1403. Specifically, all asbestos-containing material shall be removed and encapsulated prior to demolition, such that no asbestos fibers are released. ***Air-2*** Prior to advertising for construction bids for each structural element of the proposed project, the plans and specifications shall be reviewed by the lead agency to ensure that the requirement to comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 1403, Rule 402, and Rule 403, is included. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The specifications shall require the construction contractor to present a Rule 402/Rule 403 compliance plan at the construction start-up meeting, prior to demolition, construction staging, or grading. The Rule 402/Rule 403 compliance plan shall include mitigation measures Air-2 through Air-12, or comparable measures to prevent nuisance dust and visible emissions. The construction activities related to the proposed project shall comply with SCAQMD regulations, including Rule 1403, Rule 402, and Rule 403. Rule 402 specifies that there shall be no dust impacts off site that would be sufficient to cause a nuisance. Rule 403 specifies that construction activities shall restrict visible emissions from occurring. The contractor's Rule 402/Rule 403 compliance plan shall be subject to approval by the City of Long Beach. Weekly inspections shall be undertaken by the City of Long Beach to ensure conformance with the approved Rule 402/Rule 403 compliance plan. ***Air-3*** Soil moistening shall be required to treat exposed soil during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the plans and specifications shall be reviewed by the lead agency to ensure	Implementation of mitigation measures Air-1 through Air-13 would reduce inputs on air quality for construction and operation of the proposed project to the maximum extent feasible, in accordance with the guidance provided by the SCAQMD. However, impacts to air quality from construction emissions of NO_x would remain significant.

Impact	Mitigation Measure	Level of Significance After Mitigation
	that the requirement for the construction contractor to ensure that soil is moistened prior to grading and that soil moisture content is maintained at a minimum of 12 percent for all grading activities is included. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The construction contractor shall demonstrate compliance with this measure through the submission of weekly monitoring reports to the lead agency. At a minimum, active operations shall utilize one or more of the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type that is part of the active operation. ***Air-4*** Soil moistening shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to ensure that soil shall be moistened not more than 15 minutes prior to the daily commencement of soil-moving activities and three times a day, or four times a day under windy conditions, in order to maintain a soil moisture content of 12 percent. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-5*** Application of water or a chemical stabilizer shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to apply water or a chemical stabilizer to maintain a stabilized surface on the last day of active operations prior to a weekend or holiday. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-6*** Moistening or covering of excavated soil piles shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to ensure that excavated soil piles are watered hourly for the duration of construction or covered with temporary coverings. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-7*** Discontinuing grading activities during windy conditions shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to cease grading during periods when winds exceed 25 miles per hour. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-8*** Moistening excavated soil prior to loading on trucks shall be required at all grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to moisten	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	excavated soil prior to loading on trucks. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-9*** Transport of soils to and from the proposed project site for each element of the proposed project shall be conducted in a manner that avoids fugitive dust emissions, ensures compliance with current air quality standards, and avoids contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to cover all loads of dirt leaving the site or to leave sufficient freeboard capacity in the truck to prevent fugitive dust emissions en route to the disposal site. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-10*** Washing of wheels leaving the construction site during construction of each element of the proposed project shall be required to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. The lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to clean adjacent streets of tracked dirt at the end of each workday or install on-site wheel-washing facilities. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Air-11 Turning off engines and equipment when not in use shall be required to reduce vehicular emissions during construction of each element of the proposed project. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to reduce idling emissions by turning off equipment and truck engines when not in use for five minutes or more. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-12*** Concurrent use of multiple pieces of heavy equipment beyond the levels described in the construction scenarios shall be prohibited to the maximum extent feasible to reduce vehicular emissions. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications include the requirement to minimize to the maximum extent practicable the concurrent use of multiple pieces of heavy equipment for each element of the proposed project during construction activities. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. ***Air-13*** Carpooling and use of public transportation shall be encouraged to reduce vehicular emissions. The lead agency shall ensure that the plans and specifications include the requirement for the construction contractor to encourage construction workers to use public transit and carpools. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Cultural Resources		
Implementation of the proposed project has the potential to significantly impact paleontological resources.	***Cultural-1*** The potential impact to cultural resources related directly or indirectly to the destruction of a unique paleontological resource or unique geologic feature from the proposed project shall be reduced to below the level of significance by the presence of a qualified paleontological monitor during all ground-disturbing activities. Any paleontological discoveries shall be removed in accordance with standards for such recovery established by the Society of Vertebrate Paleontology: Where the qualified vertebrate paleontologist identifies the potential for the grading plan to result in impacts to sites recorded to contain unique paleontological resources or sediments with a medium or high potential to contain significant paleontological resources, a program for recovery of the resources shall be required. This program must include, but not be limited to, the following: • Monitoring of excavation in areas likely to contain paleontologic resources by a qualified vertebrate paleontologic monitor. The monitor shall be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil vertebrates. • Preparation of recovered specimens to a point of identification, including washing of sediments to recover small fossil vertebrates. • Identification and curation of specimens into a museum repository with retrievable storage. • Preparation of a report of findings with an appended, itemized inventory of the specimens. The report and inventory, when submitted to the appropriate lead agency, signifies the completion of the program to mitigate impacts to paleontologic resources.	Implementation of mitigation measure Cultural-1 would be expected to reduce potential significant impacts related to paleontological resources to below the level of significance.
Implementation of the proposed project has the potential to significantly impact archaeological resources.	***Cultural-2*** The impact to cultural resources related directly or indirectly to the destruction of a unique archaeological resource from the proposed project shall be reduced to below the level of significance by the presence of a qualified archaeological monitor during all ground-disturbing activities within native soils identified as Qal. The City of Long Beach shall ensure that impacts to cultural resources as a result of the potential for earthmoving activity to uncover previously unrecorded archeological resources is below the level of significance through monitoring by a qualified archaeologist of all subsurface operations undertaken in native soils identified as Qal, including but not limited to grading, excavation, trenching, and recording of any previously unrecorded archeological resources encountered during construction. The plans and specifications for all ground-disturbing activities shall identify the need for archeological monitoring and data recovery. The archaeologist shall be on site during any activity when soil is to be moved or exported. The archaeologist shall be authorized to halt the proposed project in the area of a finding, and mark, collect, and	Implementation of mitigation measure Cultural-2 would be expected to reduce potential significant impacts related to archaeological resources to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	evaluate any archaeological materials discovered during construction. In addition, an exploratory archaeological excavation shall be made (i.e., a sample test pit) to assess the presence of cultural resources. In the event that archaeological resources are encountered by the monitoring archaeologist, the archaeologist shall contact the Gabrielino/Tongva Tribal Council and arrange for a Native American monitor to be present on site during the remainder of excavation activities related to the proposed project. Copies of any archaeological surveys, studies, or reports of field observation during grading and land modification shall be prepared and certified by the attendant archaeologist and submitted to the South Central Coastal Information Center at California State University Fullerton. Any artifacts recovered during mitigation shall be deposited in an accredited and permanent scientific or educational institution for the benefit of current and future generations.	
Implementation of the proposed project has the potential to impact human remains.	***Cultural-3*** The City of Long Beach shall ensure that impacts to cultural resources related to the unanticipated discovery of human remains be reduced to below the level of significance by ensuring that, in the event human remains are encountered, construction in the area of finding shall cease and the remains shall stay in-situ pending definition of an appropriate plan. The Los Angeles County Coroner (Coroner) shall be contacted to determine whether investigation of the cause of death is required. In the event that the remains are of Native American origin, the Native American Heritage Commission shall be contacted to determine necessary procedures for protection and preservation of remains, including reburial, as provided in the State CEQA Guidelines, Section 15064.5(e), "CEQA and Archaeological Resources," CEQA Technical Advisory Series. In the event of accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken: There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: (A) The Coroner must be contacted to determine that no investigation of the cause of death is required, and (B) If the Coroner determines the remains to be Native American: 1. The Coroner shall contact the Native American Heritage Commission within 24 hours.	Implementation of mitigation measure Cultural-3 would be expected to reduce potential significant impacts related to the unanticipated discovery of human remains to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98. 4. Where the following conditions occur, the landowner of his/her authorized representative shall rebury the Native American human remains and associated grave goods, with appropriate dignity, in the property in a location not subject to further subsurface disturbance: (a) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. (b) The descendant in identified fails to make a recommendation. (c) The landowner or his/her authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Geology and Soils		
Implementation of the proposed project has potential to result in impacts associated with substantial ground shaking, and thus a degree of seismic hazard risk.	***Geology-1*** Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric inpatient tower, Phases I and II, and the central plant building, shall be minimized through conformance with California Geological Survey's Guidelines for Evaluating and Mitigating Seismic Hazards in California and all applicable City of Long Beach codes and regulations related to seismic activity. MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric inpatient tower, Phases I and II, and the central plant building are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric inpatient tower, Phases I and II, and the central plant building, the Office of Statewide Health Planning and Development shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications. ***Geology-2*** Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute (TCI) Phases I and II, and the parking structure, shall be minimized through conformance with California Geological Survey's Guidelines for Evaluating and Mitigating Seismic Hazards in California and all applicable City of Long Beach codes and regulations related to seismic activity. The Long Beach Memorial Medical Center (LBMMC) and MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure, the City of Long Beach Department of Public Works shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.	Implementation of mitigation measures Geology-1 and Geology-2 would be expected to reduce potential significant impacts related to the seismic hazard risk to the least extent possible.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has potential to result in impacts associated with geologic hazards related to liquefaction.	***Geology-3*** Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving geologic hazards related to liquefaction from seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric inpatient tower, Phases I and II, and the central plant building, shall be minimized through conformance with all applicable State of California and City of Long Beach codes and regulations. MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric inpatient tower, Phases I and II, and the central plant building are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric inpatient tower, Phases I and II, and the central plant building, the Office of Statewide Health Planning and Development shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications. ***Geology-4*** Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving geologic hazards related to liquefaction from seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute (TCI) Phases I and II, and the parking structure, shall be minimized through conformance with all applicable State of California and City of Long Beach codes and regulations. The Long Beach Memorial Medical Center (LBMMC) and MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure, the City of Long Beach Department of Public Works shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.	Implementation of mitigation measures Geology-3 and Geology-4 would be expected to reduce potential significant impacts related to liquefaction to below the level of significance.
Implementation of the proposed project has potential to result in impacts related to a substantial increase in soil erosion.	***Geology-5*** The City of Long Beach Department of Planning and Building shall require the construction contractor to implement best management practices that are consistent with the National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to avoid soil erosion during construction of the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, and central plant building. Prior to approval of final plans and specifications, the Office of Statewide Health Planning and Development (OSHPD) shall ensure that the requirement to comply with NPDES Permit No. CAS 004003 is included in the specifications. The OSHPD Inspector of Record shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003.	Implementation of mitigation measures Geology-5 and Geology-6 would manage the erosion potential during construction to the maximum extent practicable.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Geology-6 The City of Long Beach Department of Planning and Building shall require the construction contractor to implement best management practices that are consistent with the National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to avoid soil erosion during construction of the Todd Cancer Institute (TCI) Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building and utility trench, MCH link building, roadway realignment, on-site parking areas (Lots N, P, Q, R, S, and T), and parking structure. Prior to approval of final plans and specifications, the City of Long Beach Department of Planning and Building shall ensure that the requirement to comply with NPDES Permit No. CAS 004003 is included in the specifications. The City of Long Beach Department of Planning and Building shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003.	
Hazards and Hazardous Materials		
Implementation of the proposed project has the potential to result in significant impacts related to the accidental release of hazardous materials during construction.	***Hazards-1*** To avoid exposure to asbestos-containing materials (ACMs) and lead-based paints (LBPs) during demolition, construction, and remediation activities, the City of Long Beach and the Office of Statewide Health Planning and Development shall require that all such materials and wastes be identified and an Operations and Maintenance (O&M) Plan developed prior to the issuance of demolition permits for each structure constructed prior to 1979. The O&M Plan shall ensure compliance with all applicable federal, state, and local requirements and specify all work to be done, including lead and asbestos surveys of structures to be demolished, proper handling and storage of lubricants and fuels for construction equipment, and methods for remediation of ACMs and LBPs, if necessary. The O&M Plan must be submitted to the City of Long Beach Department of Health for review and approval prior to initiation of construction and demolition activities for the Miller Children's Hospital pediatric inpatient tower and central plant building, and the construction of parking lots requiring the demolition of pre-1979 constructed buildings. The O&M Plan shall, as appropriate and necessary, conform to the requirements of the Los Angeles County Department of Health Services (Local Enforcement Agency for landfills), South Coast Air Quality Management District, the Los Angeles Regional Water Quality Control Board, and the Department of Toxic Substances Control. Compliance with the O&M Plan shall be monitored by the City of Long Beach Department of Planning and Building throughout construction and demolition. ***Hazards-2*** To reduce the potential for exposure of people or property to petroleum hydrocarbon–contaminated soils and water, the Office of Statewide Health Planning and Development (OSHPD) shall require that petroleum hydrocarbon–contaminated soils and water be tested, treated, and disposed of as necessary under the oversight of the Department of Toxic Substances Control (DTSC). The OSHPD shall review plans and specifications for those elements of the proposed project to be constructed over unclassified fill: Miller Children's Hospital (MCH) pediatric inpatient tower Phase I, central plant building, and utility trench. The	Implementation of mitigation measures Hazards-1 through Hazards-3 would be expected to reduce potentially significant impacts related to the accidental release of hazardous materials during construction to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	OSHPD shall ensure that the proposed project plans and specifications disclose the potential to encounter petroleum hydrocarbon–contaminated soils and water, and require the construction contractor to remove petroleum hydrocarbon–contaminated soils and water within the construction zone, in accordance with all applicable federal, state, and local statutes and regulations and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and DTSC. ***Hazards-3*** To reduce the potential for exposure of people or property to petroleum hydrocarbon–contaminated soils and water, the City of Long Beach shall require that petroleum hydrocarbon–contaminated soils and water be tested, treated, and disposed of as necessary under the oversight of the Department of Toxic Substances Control (DTSC). The City of Long Beach shall review plans and specifications for those elements of the proposed project to be constructed over unclassified fill: Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and the Todd Cancer Institute Phases I and II. The City of Long Beach shall ensure that the proposed project plans and specifications disclose the potential to encounter petroleum hydrocarbon–contaminated soils and water, and require the construction contractor to remove petroleum hydrocarbon–contaminated soils and water within the construction zone, in accordance with all applicable federal, state, and local statutes and regulations and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and DTSC.	
Implementation of the proposed project has the potential to result in significant impacts related to the presence of undocumented abandoned wells.	***Hazards-4*** Oil wells underlying the Miller Children's Hospital (MCH) pediatric inpatient tower Phase I, central plant building, and utility trench shall be identified by the remediation contractor and properly abandoned to the current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). The project applicant shall ensure that coordination with DOGGR and proper remediation be incorporated into the construction plans, prior to final approval of plans for the MCH pediatric inpatient building Phase I, central plant building, and utility trench. If the oil wells cannot be identified through site survey by a licensed surveyor, excavation shall be undertaken to locate the wells under the oversight of the DOGGR and/or the Office of Statewide Health Planning and Development. If the abandoned oil wells are determined to be leaking, remediation shall be conducted to seal all leaks or venting systems shall be required to transmit gas safely away from the proposed project site, in accordance with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.	Implementation of mitigation measures Hazards-4 and Hazards-5 would be expected to reduce potentially significant impacts related to the discovery of undocumented abandoned wells to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Hazards-5 Oil wells underlying the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II shall be identified by the remediation contractor and properly abandoned to the current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). The project applicant shall ensure that coordination with DOGGR and proper remediation be incorporated into the construction plans, prior to final approval of plans for the MCH pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II. If the oil wells cannot be identified through site survey by a licensed surveyor, excavation shall be undertaken to locate the wells under the oversight of DOGGR and/or the City of Long Beach. If the abandoned oil wells are determined to be leaking, remediation shall be conducted to seal all leaks or venting systems shall be required to transmit gas safely away from the proposed project site, in accordance with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.	
Implementation of the proposed project has the potential to result in significant impacts related to the release of hazardous subsurface gases.	***Hazards-6*** To mitigate potential accumulation of methane, hydrogen sulfide, or other petroleum-related gases into underground areas (i.e., basements) or inside buildings, the Office of Statewide Health Planning and Development (OSHPD) shall require the installation of vapor barriers (i.e., high-density polyethylene membrane liners) and passive venting systems in the foundations of the Miller Children's Hospital pediatric inpatient tower and central plant building, if determined to be required by the Health Risk Assessment. Prior to the issuance of building permits for the specified buildings, the OSHPD shall review the plans and specifications to ensure that the appropriate vapor barriers or passive venting systems have been incorporated into the design and are consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control. ***Hazards-7*** To mitigate potential accumulation of methane, hydrogen sulfide, or other petroleum-related gases into underground areas (i.e., basements) or inside buildings, the City of Long Beach shall require the installation of vapor barriers (i.e., high-density polyethylene membrane liners) and passive venting systems in the foundations of the Miller Children's Hospital (MCH) pediatric outpatient building and the Todd Cancer Institute Phases I and II, if determined to be required by the Health Risk Assessment. Prior to the issuance of building permits for the specified buildings, the City of Long Beach shall review the plans and specifications to ensure that the appropriate vapor barriers or passive venting systems have been incorporated into the design and are consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.	Implementation of mitigation measures Hazards-6 and Hazards-7 would be expected to reduce potentially significant impacts related to the release of hazardous subsurface gases.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has the potential to result in significant impacts related to the encounter of USTs during grading activities.	***Hazards-8*** Prior to the issuance of grading permits for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, the Office of Statewide Health Planning and Development shall review the grading plans to ensure that there is a note requiring the construction contractor to stop work and notify the Certified Unified Program Agency of the unanticipated encounter of underground storage tanks (USTs) during grading activities. The UST shall be remediated in accordance with County of Los Angeles guidelines and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control. ***Hazards-9*** Prior to the issuance of grading permits for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II, the City of Long Beach shall review the grading plans to ensure that there is a note requiring the construction contractor to stop work and notify the Certified Unified Program Agency of the unanticipated encounter of underground storage tanks (USTs) during grading activities. The UST shall be remediated in accordance with County of Los Angeles guidelines and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.	Implementation of mitigation measures Hazards-8 and Hazards-9 would be expected to reduce potentially significant impacts related to the encounter of USTs during grading activities.
Implementation of the proposed project has the potential to result in significant impacts related to exposure to hazardous materials during routine transport and disposal.	***Hazards-10*** To avoid exposure to asbestos-containing materials, lead-based paints, petroleum hydrocarbon–contaminated soils, biomedical waste, and radiological waste during routine transport and disposal for both the construction phase and operational phase of the proposed project, the City of Long Beach shall require that the construction contractor and the Long Beach Memorial Medical Center (LBMMC) store, use, and transport all hazardous materials in compliance with all relevant regulations and guidelines. The routine transport of hazardous materials to and from the LBMMC campus during construction and operation of the elements of the proposed project shall be accomplished via Atlantic Avenue, Spring Street, Columbia Street, Patterson Street, 27th Street, and Willow Street. Compliance shall be determined by monitoring by regulatory agencies. Transport, storage, and handling of construction-related hazardous materials shall be consistent with the guidelines provided by the California Department of Transportation, Los Angeles Regional Water Quality Control Board, the South Coast Air Quality Management District, and the Certified Unified Program Agency. Each agency shall regulate and enforce, through permitting and record keeping, the monitoring and enforcement of this mitigation measure.	Implementation of mitigation measure Hazards-10 would be expected to reduce potentially significant impacts related to exposure to hazardous materials during routine transport and disposal.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has the potential to result in significant impacts related to the emergency response and evacuation plan.	***Hazards-11*** To avoid impacts on the existing emergency response and evacuation plan, the City of Long Beach shall require the identification of an alternative emergency water supply source, evacuation routes, and emergency response vehicle routes during roadway realignment and upon expansion of the Miller Children's Hospital facility. The revised emergency response and evacuation plan shall be updated by the construction contractor prior to initiation of construction activities.	Implementation of mitigation measure Hazards-11 would be expected to reduce potentially significant impacts related to the emergency response and evacuation plan.
Implementation of the proposed project has the potential to result in significant impacts related to exposure to COPCs.	***Hazards-12*** To avoid exposure to chemicals of potential concern (COPCs) in the soil, the Office of Statewide Health Planning and Development shall require that volatile organic compounds (VOCs) be monitored during excavation requested for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, in compliance with the South Coast Air Quality Management District Rule 1166 or Rule 1150, which sets requirements to control the emission of VOCs from excavating, grading, handling, and treating VOC-contaminated soil. The procedures for removing, handling, and disposing of petroleum hydrocarbon–contaminated soil and water shall include and require adherence to health and safety protocols (e.g., no eating in the construction zone, use of personal protective equipment) as provided in a site health and safety plan, as well as monitoring and control of emissions of COPCs that may occur during the construction work. ***Hazards-13*** To avoid exposure to chemicals of potential concern (COPCs) in the soil, the City of Long Beach shall require that volatile organic compounds (VOCs) be monitored during excavation requested for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II, in compliance with the South Coast Air Quality Management District Rule 1166 or Rule 1150, which sets requirements to control the emission of VOCs from excavating, grading, handling, and treating VOC-contaminated soil. The procedures for removing, handling, and disposing of petroleum hydrocarbon–contaminated soil and water shall include and require adherence to health and safety protocols (e.g., no eating in the construction zone, use of personal protective equipment) as provided in a site health and safety plan, as well as monitoring and control of emissions of COPCs that may occur during the construction work.	Implementation of mitigation measures Hazards-12 through Hazards-15 would be expected to reduce potentially significant impacts related to exposure to COPCs.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Hazards-14 At least 30 days prior to approval of final plans and specifications for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, the Office of Statewide Health Planning and Development shall review and provide comments on the plans and specifications to ensure compliance with all requirements resulting from the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control. ***Hazards-15*** Prior to approval of final plans and specifications for the Miller Children's Hospital link building and Todd Cancer Institute Phases I and II, the City of Long Beach shall review the plans and specifications to ensure compliance with all requirements resulting from the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.	
Hydrology and Water Quality		
Implementation of the proposed project has the potential to increase the amount of erosion, transport of pollutants, and siltation during construction of all elements of the proposed project.	***Hydro-1*** The Office of Statewide Health Planning and Development (OSHPD) shall require the construction contractor to avoid erosion, transport of pollutants, and siltation during construction of the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building. Prior to final grading plans, the OSHPD shall ensure that the plans and specifications require the construction contractor to comply with the revised General Construction Activity Storm Water Permit. Such compliance measures would, at a minimum, include the preparation of a Notice of Intent and the implementation of a Local Storm Water Pollution Prevention Plan (SWPPP) and a Wet Season Erosion Control Plan (for work between October 15 and April 15). These plans shall incorporate all applicable best management practices (BMPs), as described in the California Storm Water Best Management Practice Handbook, Construction Activity, into the construction phase of the proposed project. Prior to construction, temporary measures must be implemented to prevent transport of Pollutants of Concern from the construction site to the storm drainage system. The BMPs shall apply to both the actual work areas and contractor staging areas. Selection of construction-related BMPs would be in accordance with the requirements of the City of Long Beach Storm Water Program, Development Best Management Practices Handbook.	Implementation of mitigation measure Hydro-1 would be expected to reduce impacts to hydrology and water quality from the increased amount of erosion, transport of pollutants, and siltation during construction of all elements of the proposed project.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has the potential to increase the amount of erosion, transport of pollutants, and siltation during construction of all elements of the proposed project.	***Hydro-2*** The City of Long Beach Department of Public Works shall require the construction contractor to avoid erosion, transport of pollutants, and siltation during construction of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas. Prior to final grading plans, the City of Long Beach Department of Public Works shall ensure that the plans and specifications require the construction contractor to comply with the revised General Construction Activity Storm Water Permit. Such compliance measures would, at a minimum, include the preparation of a Notice of Intent and the implementation of a Local Storm Water Pollution Prevention Plan (SWPPP) and a Wet Season Erosion Control Plan (for work between October 15 and April 15). These plans shall incorporate all applicable best management practices (BMPs), as described in the California Storm Water Best Management Practice Handbook, Construction Activity, into the construction phase of the proposed project. Prior to construction, temporary measures must be implemented to prevent transport of Pollutants of Concern from the construction site to the storm drainage system. The BMPs shall apply to both the actual work areas and contractor staging areas. Selection of construction-related BMPs would be in accordance with the requirements of the City of Long Beach Storm Water Program, Development Best Management Practices Handbook.	Implementation of mitigation measure Hydro-2 would be expected to reduce impacts to hydrology and water quality from the increased amount of erosion, transport of pollutants, and siltation during construction of all elements of the proposed project.
Implementation of the proposed project has the potential to increase the amount of erosion, transport of pollutants, and siltation during construction of all elements of the project, but specifically during the final grading plans.	***Hydro-3*** Prior to final grading plans for the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building, the Office of Statewide Health Planning and Development shall review the final grading plans to ensure that the plans and specifications require the construction contractor to prepare a Standard Urban Storm Water Management Plan (SUSMP) for construction activities and to implement best management practices (BMPs) for construction, materials, and waste-handling activities, which include the following: • Schedule excavation, grading, and paving activities for dry weather periods. • Control the amount of runoff crossing the construction site by means of berms and drainage ditches to divert water flow around the site. • Identify potential pollution sources from materials and wastes that will be used, stored, or disposed of on the job site. • Inform contractors and subcontractors about the clean storm water requirements and enforce their responsibilities in pollution prevention.	Implementation of mitigation measure Hydro-3 would be expected to reduce impacts to hydrology and water quality due to final grading to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	The construction contractor shall incorporate SUSMP requirements and BMPs to mitigate storm water runoff that include, but are not limited to, the following: • The incorporation of bioretention facilities located within the proposed project area • The incorporation of catch basin filtration systems • The use of porous pavements to reduce runoff volume	
Implementation of the proposed project has the potential to increase the amount of erosion, transport of pollutants, and siltation during construction of all elements of the project, but specifically during the final grading plans.	***Hydro-4*** Prior to final grading plans for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas, the City of Long Beach Department of Public Works shall review the final grading plans to ensure that the plans and specifications require the construction contractor to prepare a Standard Urban Storm Water Management Plan (SUSMP) for construction activities and to implement best management practices (BMPs) for construction, materials, and waste-handling activities, which include the following: • Schedule excavation, grading, and paving activities for dry weather periods. • Control the amount of runoff crossing the construction site by means of berms and drainage ditches to divert water flow around the site. • Identify potential pollution sources from materials and wastes that will be used, stored, or disposed of on the job site. • Inform contractors and subcontractors about the clean storm water requirements and enforce their responsibilities in pollution prevention. The construction contractor shall incorporate SUSMP requirements and BMPs to mitigate storm water runoff that include, but are not limited to, the following: • The incorporation of bioretention facilities located within the proposed project area • The incorporation of catch basin filtration systems • The use of porous pavements to reduce runoff volume	Implementation of mitigation measure Hydro-4 would be expected to reduce impacts to hydrology and water quality due to final grading to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has the potential to increase the amount of degradation of water quality during construction.	***Hydro-5*** The Office of Statewide Health Planning and Development (OSHPD) shall require the construction contractor to undertake daily street sweeping and trash removal throughout the construction of the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building. The purpose of the street sweeping and trash removal shall be to avoid degradation of water quality. Prior to the completion of final plans and specifications, the OSHPD shall review the plans and specifications to ensure that the construction documents include a requirement that the construction contractor provide daily street sweeping and trash removal to prevent degradation of water quality.	Implementation of mitigation measure Hydro-5 would be expected to reduce impacts to hydrology and water quality to below the level of significance.
Implementation of the proposed project has the potential to increase the amount of degradation of water quality during construction.	***Hydro-6*** The City of Long Beach Department of Public Works shall require the construction contractor to undertake daily street sweeping and trash removal throughout the construction of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas. The purpose of the street sweeping and trash removal shall be to avoid degradation of water quality. Prior to the completion of final plans and specifications, the City of Long Beach Department of Public Works shall review the plans and specifications for the proposed project to ensure that the construction documents include a requirement that the construction contractor provide daily street sweeping and trash removal to prevent degradation of water quality.	Implementation of mitigation measure Hydro-6 would be expected to reduce impacts to hydrology and water quality to below the level of significance.
Implementation of the proposed project has the potential to increase the amount of degradation of water quality during construction.	***Hydro-7*** Potential impacts to hydrology and water quality related to the degradation of water quality during construction of the proposed project shall be reduced to below the level of significance through the requirement to conduct a detailed hydrology study based on the final site plans and to implement the recommendations, or comparable measures, into the plans and specifications for each proposed project element prior to final approval by the City of Long Beach Department of Public Works. The hydrology study shall be prepared by a certified civil engineer, and a draft report, including recommendations, shall be submitted to the City of Long Beach Department of Public Works for review. The City of Long Beach Department of Public Works shall provide comments, if any, within 14 days of receiving the draft hydrology study. Monitoring and enforcement shall be the responsibility of the City of Long Beach Department of Public Works.	Implementation of mitigation measure Hydro-7 would be expected to reduce impacts to hydrology and water quality to below the level of significance.
Land Use and Planning		
The analysis undertaken for this EIR determined that no significant impacts related to Land Use and Planning would arise from implementation of the proposed project. Therefore, no mitigation measures are required.		

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
National Pollution Discharge Elimination System		
Implementation of the proposed project has the potential to result in impacts to NPDES.	***NPDES-1*** The City of Long Beach Planning and Building Department shall require the construction contractor to implement best management practices (BMPs) consistent with National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to reduce transport of Pollutants of Concern from the construction site to the storm drainage and waterway system for each construction element of the proposed project: Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; Todd Cancer Institute Phases I and II; roadway alignment; and parking area. Prior to completion of final plans and specifications for each construction element of the proposed project, the City of Long Beach Planning and Building Department shall ensure that the plans and specifications require compliance with NPDES Permit No. CAS 004003. The construction contractor for each element of the proposed project shall be required to submit a Standard Urban Storm Water Management Plan to the City of Long Beach for review and approval at least 30 days prior to the anticipated need for a grading permit. The City of Long Beach Planning and Building Department shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003. The Office of Statewide Health Planning and Development has jurisdiction over inpatient facilities, and the City of Long Beach would have jurisdiction over outpatient facilities.	Implementation of mitigation measure NPDES-1 would be expected to reduce impacts to NPDES to below the level of significance.
Noise		
Implementation of the proposed project has the potential to result in impacts related to construction noise.	***Noise-1*** The City of Long Beach shall minimize the potential for construction noise levels to exceed the City of Long Beach Noise Ordinance by requiring the construction contractor to properly maintain all heavy equipment used for construction of each element of the proposed project: Todd Cancer Institute Phases I and II; Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; road realignment; and parking. Prior to the completion of final plans and specifications, the City of Long Beach shall ensure that the plans and specifications include a requirement that all construction equipment shall be properly maintained. All vehicles and compressors shall utilize exhaust mufflers. Engine enclosure covers as designed by the manufacturer shall be in place at all times. The City of Long Beach shall monitor the use of heavy equipment during construction to ensure conformance with the requirements of properly maintained heavy equipment. ***Noise-2*** The City of Long Beach shall minimize the potential for construction noise levels to conflict with the City of Long Beach Noise Ordinance by requiring the plans and specifications to specify restricted periods for grading and construction for each element of the proposed project: Todd Cancer Institute Phases I and II; Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; road realignment; and parking. Prior to the	Implementation of mitigation measures Noise-1 through Noise-3 would be expected to reduce impacts related to construction noise to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	completion of final plans and specifications, the City of Long Beach shall ensure that the plans and specifications include a provision that restricts grading and construction activities to daily operation from 7:00 a.m. to 7:00 p.m., Monday through Friday, and from 8:00 a.m. to 5:00 p.m. on Saturdays. There should be no work on Sundays or federal holidays. ***Noise-3*** The City of Long Beach shall require that the plans and specifications for the Miller Children's Hospital pediatric inpatient tower and the central plant building require that construction equipment shall be equipped with state-of-the-art noise-muffling devices. Barriers or curtains shall be required to be installed close to equipment to shield the equipment from the receiver. The height and length of the barriers or curtains shall be determined based on location of construction activity and receiver. Because of the close proximity of the source and receiver, the impact would be dependent on the location of the noise sources. Prior to the start of construction, the contractor shall develop a noise control plan based on actual equipment to be used and location of various activities. If actual equipment noise levels are not available, equipment noise levels shall be measured in the field. The plan should predict the noise levels with the actual equipment and with the barriers or curtains in place. The plan shall take into consideration the order of construction and equipment mix. Equipment mix and/or the number of equipment operating shall be considered in reducing the noise levels.	
Public Services		
Implementation of the proposed project has the potential to result in impacts related to exposure of persons or property to security-related issues, vandalism, and safety hazards during operation of these facilities.	***Public Services-1*** Exposure of people or property to security-related issues from the operation of the Miller Children's Hospital pediatric inpatient tower Phases I and II, central plant building, pediatric outpatient building, and link building; the Todd Cancer Institute (TCI) Phases I and II; and all new parking facilities within the Long Beach Memorial Medical Center (LBMMC) campus shall be minimized through an amendment of the existing security plan prior to the operation of each proposed project element. The LBMMC shall submit to the City of Long Beach an amendment to the security plan that identifies the existing measures that shall be applied to each element of the proposed project at least 30 days prior to the anticipated need for an occupancy permit. ***Public Services-2*** Exposure of property to vandalism and of people to safety hazards from the operation of the Miller Children's Hospital pediatric inpatient tower Phases I and II, central plant building, pediatric outpatient building, and link building; the Todd Cancer Institute (TCI) Phases I and II; and all new parking facilities within the Long Beach Memorial Medical Center (LBMMC) campus shall be minimized through an amendment to the existing lighting plan prior to the operation of each proposed project element. The LBMMC shall submit to the City of Long Beach an amendment to the lighting plan that documents the location of all exterior lighting	Implementation of mitigation measures Public Services-1 and Public Services-2 would be expected to reduce impacts related to public services to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	on structures, within parking areas, and along pedestrian and vehicular routes of travel. The amended lighting plan shall be submitted to the City of Long Beach at least 30 days prior to the anticipated need for an occupancy permit.	
Traffic and Transportation		
Implementation of the proposed project has the potential to result in significant impact to traffic and transportation.	***Transportation-1*** The following improvements are potential recommendation measures identified to mitigate significantly impacted intersections. The proposed project can be expected to pay a fair share of the construction costs to implement these mitigation measures. 1) Atlantic Avenue/Spring Street • Modify existing median and restripe Spring Street to provide a second eastbound (EB) left-turn lane and a second westbound (WB) left-turn lane. • Modify the traffic signal as needed. 2) Atlantic Avenue/East 29th Street • Restrict EB left-turn movements from 29th Street to northbound (NB) Atlantic Avenue. 6) Atlantic Avenue/East 27th Street • Restrict EB left-turn movements from 27th Street to NB Atlantic Avenue. 7) Atlantic Avenue/Willow Street • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way. 9) Long Beach Boulevard/Willow Street • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way. 13) Long Beach Boulevard/Spring Street • Widen and/or restripe to provide an exclusive NB and southbound (SB) right-turn lane. • Modify the traffic signal, as needed. 21) Long Beach Boulevard/Wardlow Road • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.	Implementation of mitigation measures Transportation-1 and Transportation-2 would reduce significant impacts related to traffic and transportation to below the level of significance. The study area intersections are projected to operate at LOS D or better with a V/C ratio less than 1.00 during the peak hours if all of the recommended off-site improvements for the interim year 2008 and 2014 are accomplished. The impacts to 3 of 10 intersections would not be mitigated to below the level of significance for the year 2008 planning horizon. The impacts to 5 of 10 intersections would

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	22) Long Beach Boulevard/I-405 NB Ramps • Install a traffic signal. 23) I-405 SB Ramps/Crest Drive • Restripe to provide an exclusive WB right-turn lane. 29) Pasadena Avenue/Spring Street • Widen and/or restripe to provide an exclusive NB left-turn lane and an EB right-turn lane. • Install a traffic signal. ***Transportation-2*** The following improvements are potential recommendation measures identified to mitigated significantly impacted intersections. The proposed project can be expected to pay a fair share of the construction costs to implement these mitigation measures. 1) Atlantic Avenue/Spring Street • Widen and/or restripe to provide an exclusive northbound (NB) and southbound (SB) right-turn lane. • Widen and/or restripe to provide a second eastbound (EB) and westbound (WB) left-turn lane. • Modify the traffic signal, as needed. 7) Atlantic Avenue/Willow Street • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way. 9) Long Beach Boulevard/Willow Street • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way. 13) Long Beach Boulevard/Spring Street • Widen and/or restripe to provide an exclusive NB, SB, and EB right-turn lane. • Widen and/or restripe to provide a second EB through lane. • Modify the traffic signal, as needed.	not be mitigated to below the level of significance for the year 2014 planning horizon.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	21) Long Beach Boulevard/Wardlow Road • No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way. Impacts would be mitigated through the specified scenario or other comparable scenarios that adhere to the same performance standards.	
Implementation of the proposed project has the potential to result in significant impact to traffic and transportation, specifically the amount of available parking spaces.	***Transportation-3*** Construction and operation impacts to parking for each element of the proposed project shall be mitigated through the implementation of a parking program or comparable measure that provides sufficient long-term parking to meet City of Long Beach code requirements. Long Beach Memorial Medical Center shall keep the City of Long Beach informed of any modifications to the parking program for the proposed project. Construction parking plans shall be submitted to the City of Long Beach at least 30 days prior to the anticipated issuance of a grading permit for each element of the proposed project. Operation parking plans shall be submitted to the City of Long Beach at least 30 days prior to the anticipated issuance of occupancy permits or operation of the specified element of the proposed project. *Roadway Realignment* *Construction* Miller Children's Hospital shall submit a construction parking plan to address the 195 parking spaces that are expected to be removed from Lot K as a result of the construction of the roadway realignment element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the loss of the 195 parking spaces shall be offset through the use of 195 of the existing available 259 parking spaces. *Operation* Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 195 parking spaces to replace parking spaces that are expected to be removed from Lot K as a result of the roadway realignment element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. During construction, it is anticipated that the permanent loss of the 195 parking spaces shall be offset through the use of 195 of the existing available 259 parking spaces.	Implementation of mitigation measure Transportation-3 would reduce construction and operation impacts on parking to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Miller Children's Hospital–Pediatric Inpatient Tower Phase I, Utility Trench, and Central Plant Building *Construction* Miller Children's Hospital shall submit a construction parking plan to address the 155 parking spaces that are expected to be removed from demolition of Parking Lot F (86-space parking structure), existing maintenance yard (14 spaces), and the additional temporary loss of spaces during construction from Lot K (55 spaces) as a result of the construction of the Miller Children's Hospital pediatric inpatient tower Phase I, utility trench, and central plant building element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the loss of the 70 parking spaces shall be offset through the use of 70 of the existing available 259 parking spaces. The remaining 85 spaces shall be offset through the use of 85 of the 121 available spaces in Lot N. *Operation* Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 254 additional parking spaces (replace 100 spaces lost as a result of construction, provide 144 spaces for operation of Miller Children's Hospital pediatric inpatient tower Phase I, and provide 10 spaces for operation of the central plant building). The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the permanent loss of the 254 parking spaces shall be offset through the use of existing available parking spaces, Lot N, lease of off-site parking spaces, and construction of new parking spaces at the central plant building. The 86 spaces lost from Lot F and the 144 additional spaces required to operate Miller Children's Hospital pediatric inpatient tower Phase I would be provided through the use of 70 existing available spaces within the Long Beach Memorial Medical Center campus, use of the 121 spaces in Lot N, and use of 53 spaces to be leased off site at Lot L (296 space lot). A 10-car parking area would be provided at the central plant building to support operations. *Todd Cancer Institute Phase I* *Construction* The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 306 parking spaces that are expected to be removed from Parking Lot A, including 171 spaces permanently removed by the footprint of the building and additional 135 parking spaces to be temporarily removed as a result of construction staging. It is anticipated that the loss of the 306 parking spaces shall be offset through the use of 163 spaces to be leased off site at Lot L, and 143 spaces to be leased off site at Lot M.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Operation Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 589 additional parking spaces (replace 171 spaces lost as a result of construction, and provide 418 spaces for operation of Todd Cancer Institute Phase I). It is anticipated that the loss of the 589 parking spaces shall be offset through the use of 243 spaces to be leased off site at Lot L, 238 spaces to be leased off site at Lot M, 68 spaces to be provided through development of Lot P on site, and 40 spaces to be provided through development of Lot Q. *Miller Children's Hospital—Pediatric Outpatient Building* *Construction* Miller Children's Hospital shall submit a construction parking plan to address the 43 parking spaces that are expected to be removed from Lot K. It is anticipated that the loss of the 43 parking spaces shall be offset through the use of 43 spaces to be provided through development of Lot R. *Operation* Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 443 additional parking spaces (replace 43 spaces lost as a result of construction and provide 400 spaces for operation of the Miller Children's Hospital pediatric outpatient building). It is anticipated that the permanent need for 443 parking spaces shall be offset through the use of 31 spaces in Lot Q, 96 spaces in Lot R, 72 spaces in Lot S, 87 spaces in Lot T, and 157 spaces provided by development of a 1,404-space parking structure within the existing footprint of Lot K, which would also accommodate the 189 parking spaces removed as a result of construction of the parking structure itself. *Todd Cancer Institute Phase II* *Construction* The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 275 parking spaces that would be lost to construction (68 parking spaces) and construction staging (207 parking spaces). It is anticipated that the loss of the 275 parking spaces shall be offset through the provision of 275 parking spaces in a 1,404-space parking structure to be developed within the existing footprint of Lot K.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
	Operation The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 280 parking spaces that would be lost to construction (68 parking spaces) and operation of the Todd Cancer Institute Phase II (212 parking spaces). It is anticipated that the loss of the 280 parking spaces shall be offset the provision of 280 parking spaces in the 1,404-space parking structure to be developed within the existing footprint of Lot K. *Miller Children's Hospital—Link Building* *Construction* Not required. *Operation* Miller Children's Hospital shall submit an operation parking plan to address the 50 parking spaces to support operation of the MCH link building. It is anticipated that the 50 parking spaces required to support operation of the MCH link building shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K. *Miller Children's Hospital—Pediatric Inpatient Tower Phase II* *Construction* Miller Children's Hospital shall submit a construction parking plan to address the 20 parking spaces that would be lost to construction staging. It is anticipated that the loss of the 20 parking spaces shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K. *Operation* Miller Children's Hospital shall submit an operation parking plan to address the 184 parking spaces required to support operation of the Miller Children's Hospital pediatric inpatient tower Phase II. It is anticipated that the 184 parking spaces, required to operate the Miller Children's Hospital pediatric inpatient tower Phase II, shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K.	

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Utilities and Service Systems		
Implementation of the proposed project has the potential to result in significant impacts related to the increased solid waste generation.	***Utilities-1*** Diversion of at least 50 percent of the construction solid waste shall be undertaken to ensure compliance with applicable federal, state, and local statutes related to solid waste and reduce direct and cumulative impacts from construction to below the level of significance. Prior to advertising for construction bids for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench, the Office of Statewide Health Planning and Development (OSHPD) shall ensure that the plans and specifications include the requirement for the construction contractor to comply with the Solid Waste Management Act of 1989. To ensure conformance with the Solid Waste Management Act of 1989, the OSHPD shall require the construction contractor to manage the solid waste generated during construction of each element of the proposed project by diverting at least 50 percent of it from disposal in landfills, particularly Class III landfills, through source reduction, reuse, and recycling of construction and demolition debris. The construction contractor shall submit a construction solid waste management plan to the OSHPD for approval prior to initiation of demolition activities for the MCH pediatric inpatient tower Phase I, central plant building, and utility trench. The construction contractor shall demonstrate compliance with the solid waste management plan through the submission of monthly reports during demolition activities that estimate total solid waste generated and diversion of 50 percent of the solid waste.	Implementation of mitigation measure Utilities-1 would reduce significant impacts related to solid waste from the construction of the MCH pediatric inpatient tower Phases I and II, central plant building, and utility trench to below the level of significance.
Implementation of the proposed project has the potential to result in significant impacts related to the increased solid waste generation.	***Utilities-2*** Diversion of at least 50 percent of the construction solid waste shall be undertaken to ensure compliance with applicable federal, state, and local statutes related to solid waste and reduce direct and cumulative impacts from construction to below the level of significance. Prior to advertising for construction bids for Todd Cancer Institute (TCI) Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, roadway realignment, and parking facilities, the City of Long Beach shall ensure that the plans and specifications include the requirement for the construction contractor to comply with the Solid Waste Management Act of 1989. To ensure conformance with the Solid Waste Management Act of 1989, the City of Long Beach shall require the construction contractor to manage the solid waste generated during construction of each element of the proposed project by diverting at least 50 percent of it from disposal in landfills, particularly Class III landfills, through source reduction, reuse, and recycling of construction and demolition debris. The construction contractor shall submit a construction solid waste management plan to the City of Long Beach for approval prior to initiation of demolition activities for TCI Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The construction contractor shall demonstrate compliance with the solid waste management plan through the submission of monthly reports during demolition activities that estimate total solid waste generated and diversion of 50 percent of the solid waste.	Implementation of mitigation measure Utilities-2 would reduce significant impacts related to solid waste from the construction of the TCI Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities to below the level of significance.

TABLE ES.5-1
SUMMARY OF IMPACTS, Continued

Impact	Mitigation Measure	Level of Significance After Mitigation
Implementation of the proposed project has the potential to increase the amount of trash produced at the site.	***Utilities-3*** The Office of Statewide Health Planning and Development (OSHPD) shall review the plans and specifications for the Miller Children's Hospital pediatric inpatient tower Phases I and II and central plant building to ensure that the existing Long Beach Memorial Medical Center service area has adequate trash and recycling receptacles for compliance with applicable federal, state, and local statutes related to solid waste and to reduce direct and cumulative impacts from project operation and maintenance to below the level of significance. Such compliance may be partially attained through the provision of a service area for the central plant building. Prior to advertising for construction bids for each new building, the OSHPD shall ensure that the plans and specifications designating locations for trash receptacles and recycling receptacles are in conformance with the California Solid Waste Reuse and Recycling Access Act of 1991. Wherever trash receptacles are provided throughout the proposed project site, a recycling receptacle for plastic, aluminum, and metal shall also be provided. Signs encouraging patrons to recycle shall be posted near each recycling receptacle.	Implementation of mitigation measure Utilities-3 would reduce significant impacts related to solid waste generated by the operation of the MCH pediatric inpatient tower Phases I and II and central plant building to below the level of significance.
Implementation of the proposed project has the potential to increase the amount of trash produced at the site.	***Utilities-4*** The City of Long Beach shall review the plans and specifications for the Todd Cancer Institute Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and parking facilities to ensure that adequate service areas are provided for trash and recycling receptacles for compliance with applicable federal, state, and local statutes related to solid waste and to reduce direct and cumulative impacts from project operation and maintenance to below the level of significance. Prior to advertising for construction bids for each new building, the City of Long Beach shall ensure that the plans and specifications designating locations for trash receptacles and recycling receptacles are in conformance with the California Solid Waste Reuse and Recycling Access Act of 1991. Wherever trash receptacles are provided through the proposed project site, a recycling receptacle for plastic, aluminum, and metal shall also be provided. Signs encouraging patrons to recycle shall be posted near each recycling receptacle.	Implementation of mitigation measure Utilities-4 would reduce significant impacts related to solid waste generated by the operation of the TCI Phases I and II, MCH pediatric outpatient building, MCH link building, and parking facilities to below the level of significance.

SECTION 1.0
INTRODUCTION

This Environmental Impact Report (EIR) has been prepared by the City of Long Beach (City) to assess the environmental consequences of the proposed Long Beach Memorial Medical Center Expansion (proposed project). The proposed project consists of a proposed Master Plan of Land Uses and the development of six specific proposed project elements within the approximately 54-acre Long Beach Memorial Medical Center campus (Campus) in the City of Long Beach, County of Los Angeles, California. The 2005 Master Plan (Appendix A, *Master Plan*) replaces the 1999 Master Plan currently on file with the City of Long Beach with a Master Plan that addresses future land uses and identifies capital improvement projects, which the Long Beach Memorial Medical Center (LBMMC) wishes to accomplish by year 2012 to meet the anticipated needs of the community through year 2020. Among these capital improvements are six specific improvements, which would be constructed within a five- to eight-year planning horizon, contingent on the availability of funding. This EIR analyzes the six proposed improvements and the Master Plan of Land Uses at a project level of detail. The City of Long Beach is the Lead Agency for the proposed project, pursuant to the California Environmental Quality Act (CEQA).

1.1 PURPOSE AND SCOPE OF THE EIR

The City has prepared this EIR to support the fulfillment of the six major goals of CEQA:

- To disclose to the decision makers and to the public significant environmental effects of the proposed activities
- To identify ways to avoid or reduce environmental damage
- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures
- To disclose to the public the reasons for agency approvals of projects with significant environmental effects
- To foster interagency coordination in the review of projects
- To enhance public participation in the planning process

Although the EIR neither controls nor anticipates the ultimate decision on the proposed project, the City (and other public agencies that will render discretionary decisions related to the proposed project) must consider the information in the EIR and make findings concerning each potentially significant impact identified.

1.1.1 Intent of CEQA

As provided in the State CEQA Guidelines (California Code of Regulations, Section 15000 et seq.), public agencies are charged with the duty to avoid or minimize environmental damage where feasible. In discharging this duty, the City has an obligation to balance a variety of public objectives, including economic, environmental, and social issues (Section 15021 of the State CEQA Guidelines). The findings and conclusions of the EIR regarding environmental impacts do

not control the City's discretion to approve, deny, or modify the proposed project, but instead are presented as information intended to aid the decision-making process. Sections 15122 through 15132 of the State CEQA Guidelines describe the required content of an EIR: a description of the proposed project and the environmental setting (existing conditions), an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts.

As a program-level EIR for the Master Plan, this EIR addresses the logical parts in the chain of contemplated actions (Section 15168 of the State CEQA Guidelines). A program-level EIR provides an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action, ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis, avoids duplicative reconsideration of basic policy considerations, allows the Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the Lead Agency has greater flexibility to deal with the basic problems or cumulative impacts, and allows reduction in paperwork (Section 15168 (a)(4)(b) of the State CEQA Guidelines). As a project-level EIR, this portion of the document primarily focuses on the changes in the environment that would result from the construction, operation, and maintenance of the six identified project components. The City is required to consider the information in the EIR with any other relevant information in making final decisions on the proposed project (Section 15121 of the State CEQA Guidelines).

1.1.2 Environmental Review Process

A Notice of Preparation (NOP) concerning the EIR for the proposed project was circulated for a 30-day review period that began on August 23, 2004, and closed on September 23, 2004. An Initial Study was prepared to focus the environmental resources to be analyzed in the EIR. A total of eight comment letters were received in response to the NOP and Initial Study. Copies of the NOP and the comment letters submitted in response to the Initial Study are included in this document (Appendix B, *Initial Study, NOP, and Comment Letters*). The Initial Study prepared for the proposed project identified the environmental resources potentially subject to significant impacts.

The Initial Study and NOP were sent to the State Clearinghouse and distributed to various federal, state, regional, and local government agencies. A public Notice of Availability (NOA) of the NOP was provided in the *Press Telegram*. The NOP was sent to 48 private individuals and to the appropriate federal, state, and local regulatory agencies. The NOP and Initial Study were posted at the Long Beach Main Public Library, Burnett Public Library, and Dana Public Library. The NOP advertised a public scoping meeting for interested parties to receive information on the proposed project and the CEQA process and provided an opportunity for the submission of comments. The scoping meeting facilitated early consultation with interested parties in compliance with Section 15082 of the State CEQA Guidelines. The meeting was held on September 8, 2004, from 6:00 p.m. to 8:30 p.m. at the Houssels Forum of the Long Beach Memorial Medical Center, 2801 Atlantic Avenue, City of Long Beach, CA 90806-1737. A total of 40 individuals attended the scoping meeting. The City requested information from the public related to the range of actions under consideration, alternatives, mitigation measures, and significant effects to be carried forward for detailed analysis in the EIR. All verbal and written comments related to environmental issues that were provided during public review of the NOP and at the scoping meeting have been taken into consideration in the preparation of this EIR. The comment period on the NOP and Initial Study closed on September 23, 2004. A total of six comment letters were received in response to the NOP and Initial Study (Appendix B).

Based on the analysis undertaken in the Initial Study, the City determined that the proposed project may have a significant effect on the environment and that the preparation of an EIR is required. As a result of the analysis undertaken in the Initial Study, it was determined that the proposed project would not be expected to result in impacts to agricultural resources, biological resources, mineral resources, recreation resources, and population and housing; thus, no additional analysis of those environmental resources is undertaken in this EIR. However, the analysis in the Initial Study concluded that the proposed project had the potential to result in significant impacts related to 11 environmental resources, which are the subject of the detailed evaluation undertaken in this EIR:

- Aesthetics
- Air Quality
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- National Pollution Discharge Elimination System
- Noise
- Public Services
- Traffic and Transportation
- Utilities and Service Systems

The Draft EIR will be distributed to various federal, state, regional, and local government agencies and interested organizations and individuals for a 45-day public review period. The Draft EIR will be provided to the State Clearinghouse on January 20, 2005, for additional distribution to agencies. In addition, a public NOA of the Draft EIR will appear in the *Press Telegram* and will be mailed directly to interested parties requesting the document. The dates of the public review period are specified on the transmittal memorandum for the record accompanying this Draft EIR. In addition, copies of this Draft EIR are published on the City of Long Beach Web site at http://www.longbeach.gov/plan/pb/epd/er.asp and are available during the public review period at the following libraries:

Long Beach Main Public Library
101 Pacific Avenue
Long Beach, CA 90822
Telephone Number: (562) 570-7500
Hours of Operation: Monday and Thursday (10:00 a.m. to 8:00 p.m.)
Tuesday, Wednesday, Friday, and Saturday (10:00 a.m. to 5:30 p.m.)
Sunday (closed)

Burnett Public Library
560 East Hill Street
Long Beach, CA 90806
Telephone Number: (562) 570-1041
Hours of Operation: Monday and Thursday (closed)
Tuesday and Wednesday (12:00 p.m. to 7:00 p.m.)
Friday and Saturday (10:00 a.m. to 5:00 p.m.)
Sunday (closed)

Dana Public Library
3680 Atlantic Avenue
Long Beach, CA 90807
Telephone Number: (562) 570-1042
Hours of Operation: Monday and Wednesday (closed)
Tuesday and Thursday (12:00 p.m. to 8:00 p.m.)
Friday and Saturday (10:00 a.m. to 5:00 p.m.)
Sunday (closed)

The Draft EIR will also be available for review at the City:

Department of Planning and Building, Reception Desk
City of Long Beach
City Hall, 7th Floor
333 West Ocean Boulevard
Long Beach, CA 90802
Telephone Number: (562) 570-6193
Hours of Operation: Monday through Friday (7:30 a.m. to 4:30 p.m.)
Saturday and Sunday (Closed)

Written comments on this Draft EIR should be transmitted during the public review period to the City:

City of Long Beach
Attn: Ms. Anita Garcia
Project Manager
Department of Planning and Building
City Hall, 5th Floor
333 West Ocean Boulevard
Long Beach, CA 90802

Written comments provided by the public and public agencies will be evaluated, and written responses will be prepared for all comments received during the designated comment period. Upon completion of the evaluation, a Final EIR will be prepared and provided to the City of Long Beach Planning Commission for certification of compliance with CEQA and for review and consideration as part of the decision-making process for the proposed project. Copies of the Draft EIR are available for purchase through the City of Long Beach.

1.2 ORGANIZATION AND CONTENT

Volume I of the EIR consists of a Draft EIR that describes the proposed project, environmental setting, impacts, mitigation, and alternatives considered.

Section ES, Executive Summary, provides a summary of the existing setting, proposed project, identified significant impacts of the proposed project, and mitigation measures. Those alternatives that were considered to avoid significant effects of the proposed project are identified in the Executive Summary. In addition, the Executive Summary identifies areas of controversy known to the City, including issues raised by agencies and the public. The Executive Summary includes a list of the issues to be resolved, including the choice among alternatives, and whether or how to mitigate significant effects of the proposed project.

Section 1, Introduction, provides information related to the purpose and scope of the EIR, environmental review process, and the organization and content of the EIR.

Section 2, Project Description, provides the location and boundaries of the proposed project; statement of objectives; and a description of the programming, economic, engineering, and environmental characteristics of the proposed project. The project description identifies the intended uses of the EIR, including the list of agencies that are expected to use the EIR in their respective decision-making processes; identifies the related discretionary actions (permits and approvals) required to implement the proposed project; and identifies any related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies. The project description identifies the related projects that were considered in the evaluation of cumulative impacts.

Section 3, Existing Conditions, Significance Thresholds, Impacts, Mitigation Measures, and Level of Significance after Mitigation, describes existing conditions found at the proposed project site and the surrounding area; identifies the thresholds used to assess the potential for the proposed project to result in significant impacts; evaluates the potential impacts to environmental resources that may be generated by the proposed project, including the cumulative impacts of the proposed project in conjunction with other related projects in the area; identifies available mitigation measures to reduce significant impacts; and assesses the effectiveness of proposed mitigation measures to reduce identified impacts to below the level of significance. This portion of the EIR is organized by the applicable environmental areas that result from the analysis undertaken in the Initial Study.

Section 4, Alternatives to the Proposed Project, describes a range of reasonable alternatives to the proposed project or to the location of the proposed project. CEQA requires that the EIR explore feasible alternatives that would avoid or substantially lessen any of the significant effects of the proposed project. To be feasible, an alternative must be capable of attaining most of the basic objectives of the proposed project. CEQA requires an evaluation of the comparative impacts of the proposed project, alternatives to the proposed project, and the no-project alternative.

Section 5, Significant Environmental Effects that Cannot Be Avoided if the Proposed Project Is Implemented, summarizes the significant effects of the proposed project that cannot be mitigated to below the level of significance.

Section 6, Significant Irreversible Environmental Changes Related to Implementation of the Proposed Project, evaluates potential uses of nonrenewable resources and potential irreversible changes that may occur during the course of the proposed project.

Section 7, Growth-Inducing Impacts, evaluates the potential for the proposed project to foster economic growth or population growth, either directly or indirectly, in the surrounding environment.

Section 8, Organizations and Persons Consulted, provides a list of all governmental agencies, community groups, and other organizations consulted during the preparation of this EIR.

Section 9, Report Preparation Personnel, provides a list of all personnel who provided technical input or review in the preparation of this EIR.

Section 10, References, lists all sources, communications, and correspondence used in the preparation of this EIR.

Section 11, Draft EIR Distribution List, provides a distribution list of agencies and libraries receiving this Draft EIR that was made available during the 45-day public review period.

Volume II, Technical Appendices

Volume II provides technical appendices to support the environmental analysis contained in the EIR.

Volume III, Letters of Comment and Clarifications and Revisions

Following public review and comment on the Draft EIR (Volumes I and II), the City shall prepare Volume III of the EIR, which will consist of responses to letters of comments and any necessary clarifications and revisions that the City believes are appropriate, in light of public comments.

Section 12, Clarifications and Revisions to the Draft EIR, will include the clarifications and revisions to the EIR provided in light of public comments received on the Draft EIR.

Section 13, Response to Comments on Draft EIR, will provide a record of all comments received on the EIR with responses to substantive comment.

The Final EIR consists of Volumes I, II, and III.

SECTION 2.0
PROJECT DESCRIPTION

Consistent with the requirements of Section15124 of the State of California Environmental Quality Act (CEQA) Guidelines, this section of the Environmental Impact Report (EIR) describes the Long Beach Memorial Medical Center Expansion (proposed project), including its precise location and boundaries; existing conditions at the proposed project site; a statement of the proposed project objectives; technical, economic, and environmental characteristics; and a statement describing the intended uses of the EIR.

2.1 PROJECT LOCATION

The proposed project is located in the City of Long Beach, County of Los Angeles, California (Figure 2.1-1, *Regional Vicinity*). The Long Beach Memorial Medical Center campus (Campus) is located less than 1 mile south of U.S. Interstate 405 (San Diego Freeway), approximately 1 mile east of U.S. Interstate 710 (Long Beach Freeway), and approximately 1 mile north of State Route 1 (Pacific Coast Highway). The Campus is located approximately 3.5 miles northeast of the Port of Long Beach, approximately 1 mile east of the Los Angeles River, and approximately 1 mile west of the Long Beach Airport.

The Campus is bounded on the north by East Spring Street, on the east by Atlantic Avenue, on the south by Willow Street, and on the west by Long Beach Boulevard (Figure 2.1-2, *Long Beach Memorial Medical Center Location*). The proposed project addresses master planning for land uses and the development of specific project elements within the approximately 54-acre proposed project site in the Campus. Within the Campus, it is anticipated that approximately 16 acres would be affected by the construction, operation, and maintenance of six proposed project elements in the next 20 years.

The Campus appears on the U.S. Geological Survey (USGS) 7.5-minute series Long Beach, California, topographic quadrangle (within the southwestern portion of the Los Cerritos Land Grant Boundary) (Figure 2.1-3, *Topographic Map*).[1] The elevation of the Campus ranges from 19 feet above mean sea level to approximately 67 feet above mean sea level.

2.2 EXISTING CONDITIONS

The 54-acre Campus is completely developed and characterized by six general land uses: (1) inpatient medical facilities, (2) outpatient medical facilities, (3) mixed use (including services, retail, residential, and vacant land), (4) utilities, (5) circulation, and (6) parking (Figure 2.2-1, *Existing Conditions*). A property listing is provided in Table 2.2-1, *Description of Land Uses on the Property*. Photographs of the proposed project site are included in Figure 2.2-2, *Site Photographs*. There are approximately 1,213,945 gross square feet of structures located within the Campus (Table 2.2-2, *Existing Conditions: Gross Floor Areas*).[2] There are two licensed hospitals within the Campus: the Long Beach Memorial Medical Center (LBMMC) and Miller Children's Hospital (MCH). These facilities are centrally located on the Campus, north of 27th Street, east of Long Beach Boulevard, south of Columbia Street, and west of Atlantic Avenue. In addition to inpatient services, outpatient services are provided in structures

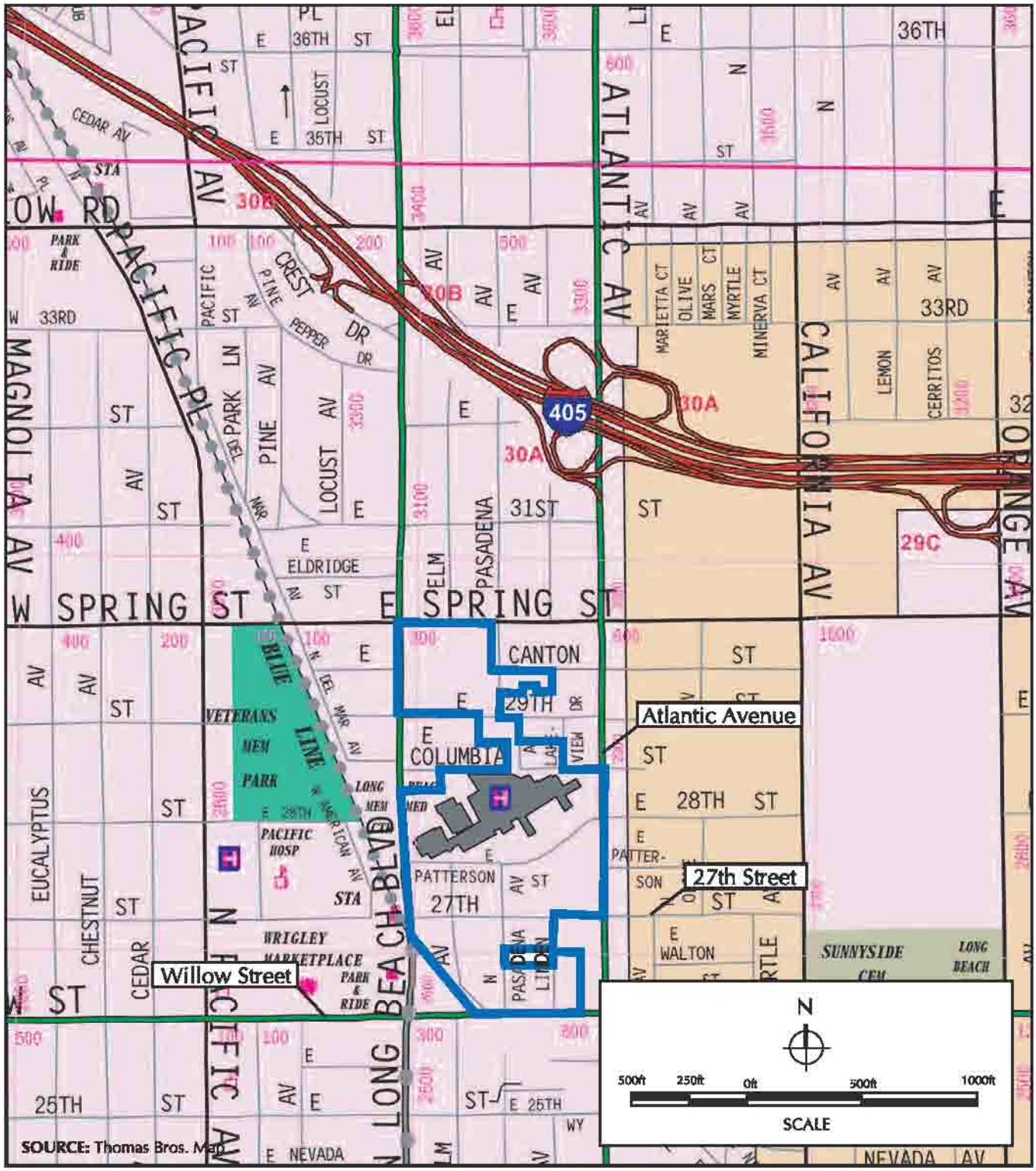
[1] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

[2] Marie Campbell, *Personal Communication*, 9 August 2004. Pat Johner, Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90806-1737.

LEGEND

★ Project Location

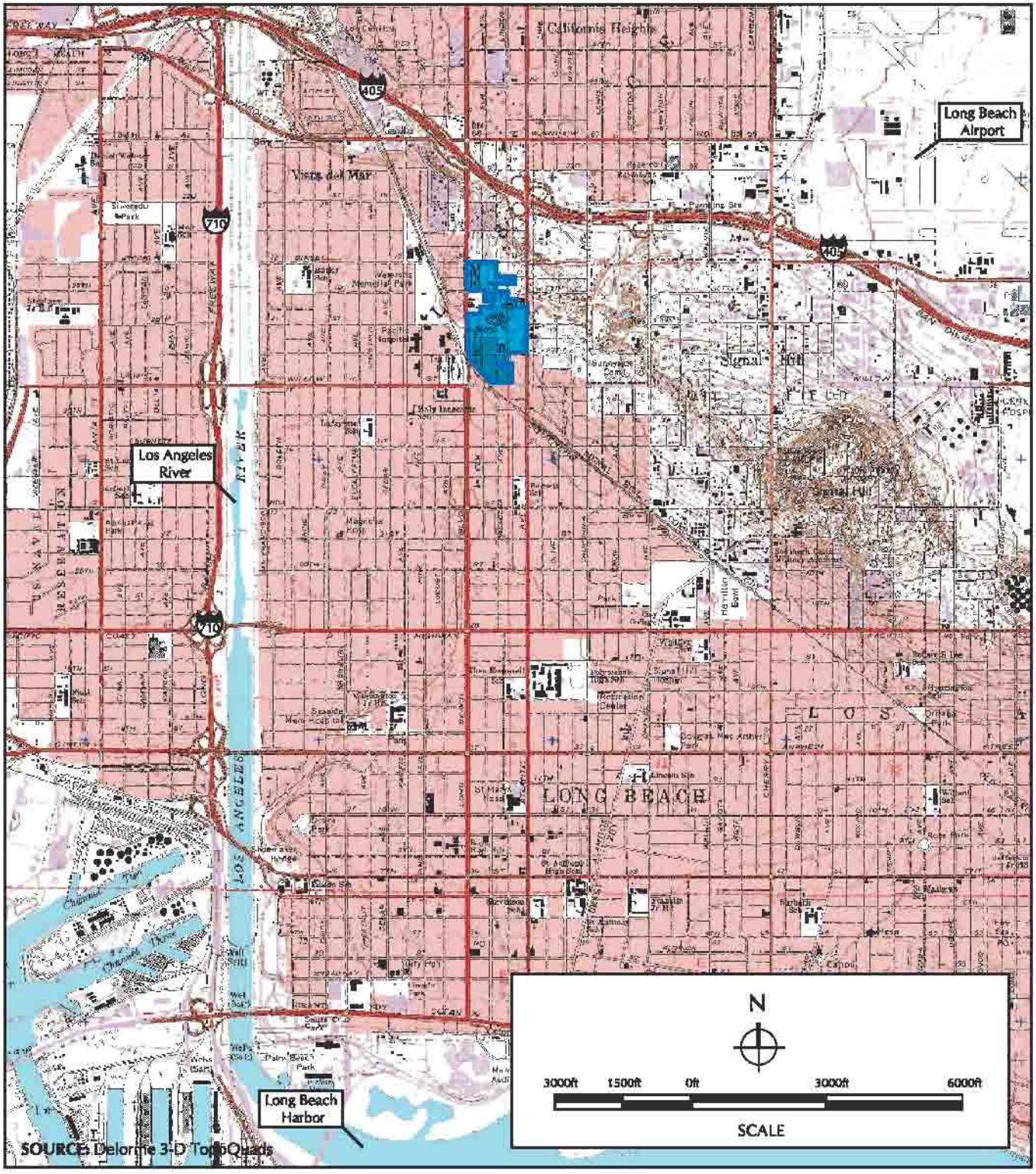
FIGURE 2.1-1
Regional Vicinity



LEGEND

Long Beach Memorial Medical Center Campus Boundary

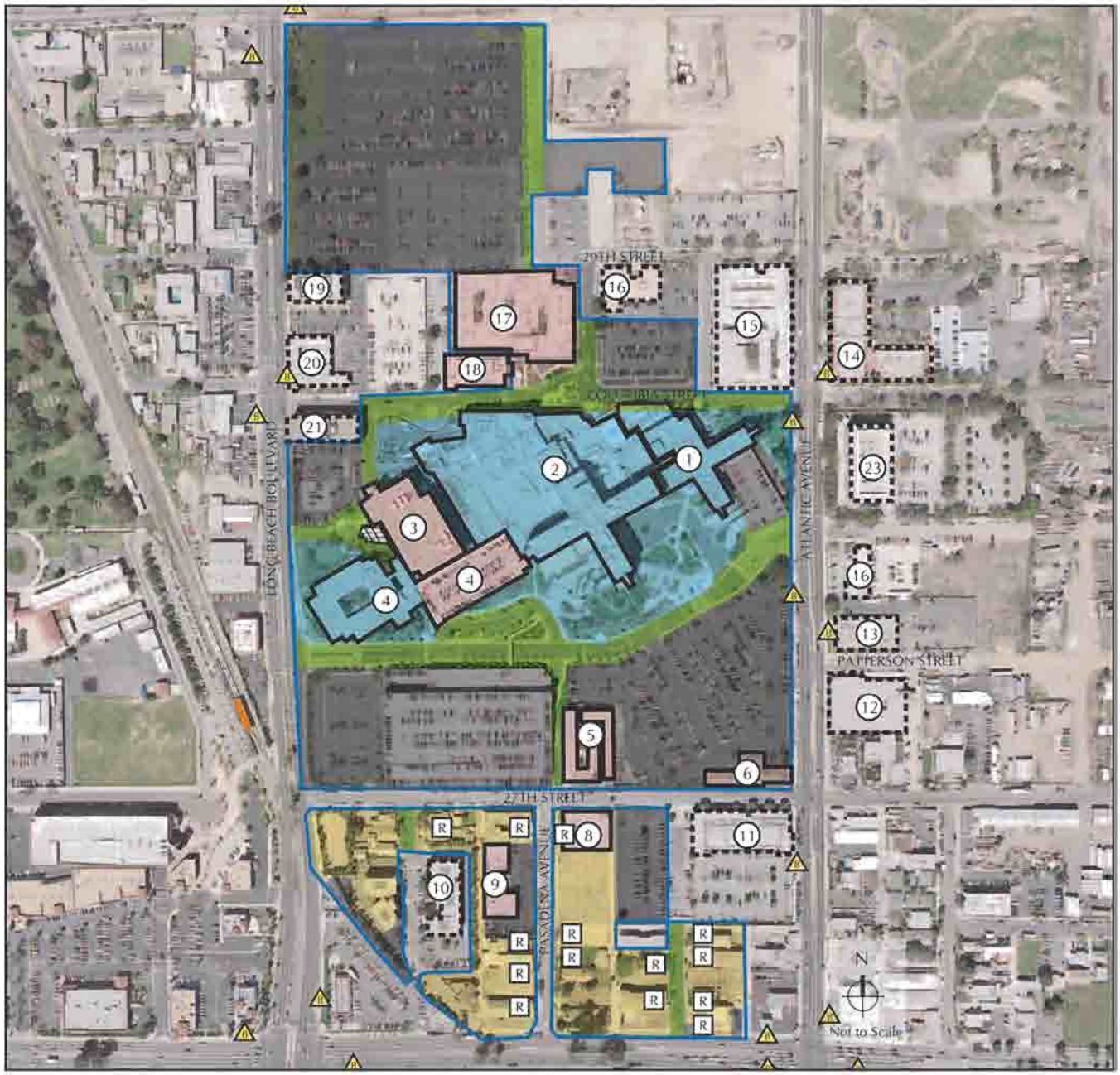
FIGURE 2.1-2
Long Beach Memorial Medical Center Location



LEGEND

- Long Beach Memorial Medical Center Campus Boundary
- Long Beach Memorial Medical Center Campus

FIGURE 2.1-3
Topographic Map



LEGEND

- Inpatient
- Outpatient
- Mixed Use
- Utilities
- Circulation
- Parking
- LBMMC Boundary
- Buildings Controlled by LBMMC
- Buildings Controlled by Others
- Blue Line (Willow Station)
- Bus Stop (Long Beach Transit)
- (1) Miller Children's Hospital
- (2) Long Beach Memorial Medical Center
- (3) Administration Building
- (4) West Facility/Rehabilitation Building
- Rehabilitation Gym/Parking
- (5) Miller House
- (6) Ranch House / WIC Medical Center
- (8) Memorial Guest Residence
- (9) Research Building
- (10) Elm Medical Plaza
- (11) 3-Story Medical Office Building
- (12) Convalescent Home
- (13) MOB with CT & MRI Orthopedics
- (14) Hillside Medical Plaza
- (15) 2-Story Atlantic MOB
- (16) Medical Office Building - 1 Story
- (17) Buffums Plaza - 1 Story
- (18) CT & MRI Center
- (19) Medical Office Building
- (20) Aloha Motel
- (21) Medical Office Building
- (23) 4-Story Altantic MOB
- [R] Residential Buildings

FIGURE 2.2-1
Existing Conditions

PHOTO 1
View of entrance to Long Beach Memorial Medical Center from intersection of Atlantic Avenue and 28th Street looking northwest

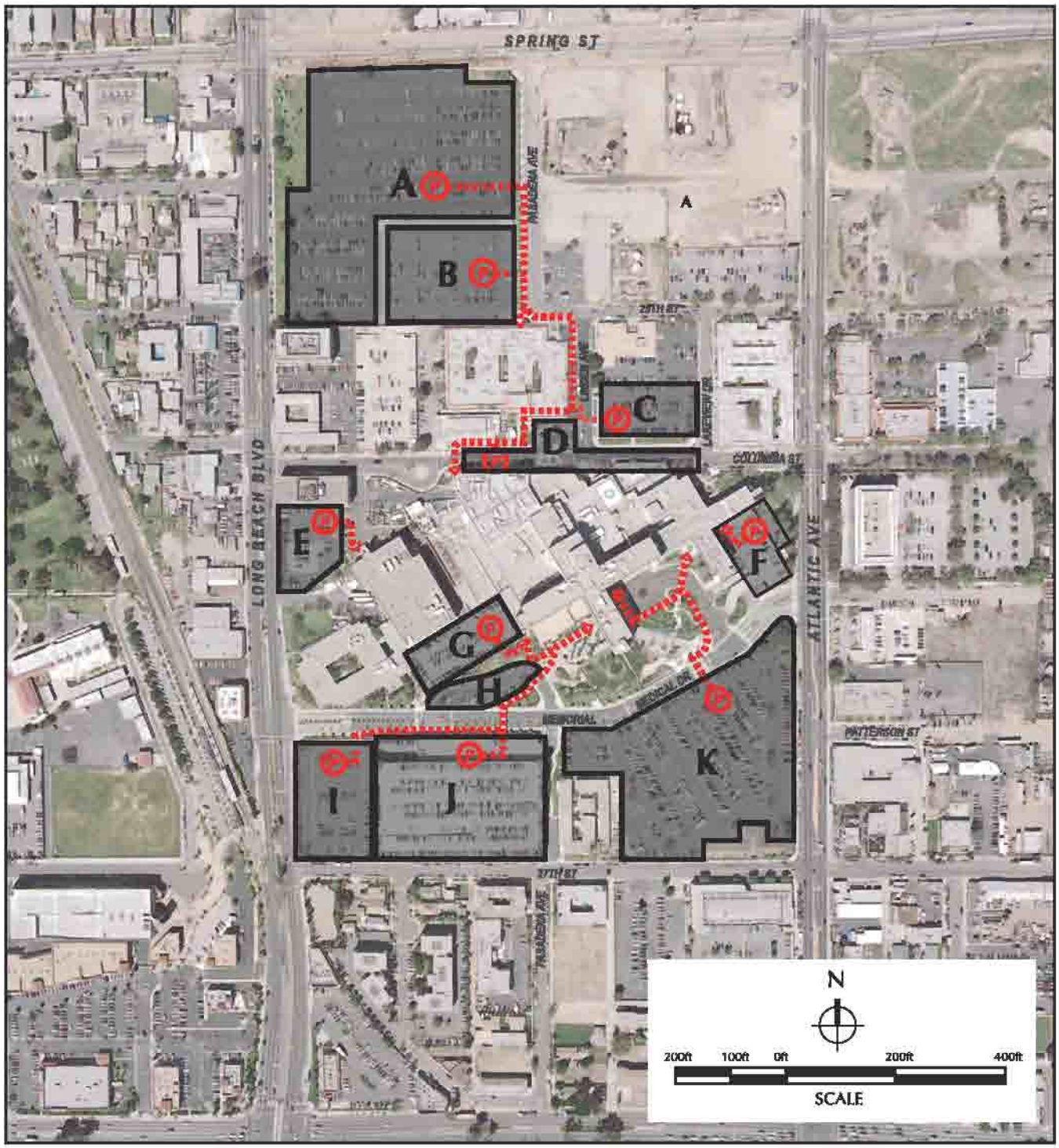
PHOTO 2
View of Long Beach Memorial Medical Center from intersection of Atlantic Avenue and Spring Street

FIGURE 2.2-2
Site Photographs

located north and south of LBMMC and MCH. There is a child care center located north of 27th Street, immediately adjacent to and east of the parking structure. There are a variety of mixed uses located south of 27th Street, including health-related programming, 72 residential units, and 18 vacant lots. Approximately 1.93 acres are dedicated to circulation within the Campus, not including public right-of-ways. There are a total of 3,452 parking spaces located in 11 locations throughout the Campus, including 259 surplus parking spaces (Figure 2.2-1; Figure 2.2-3, *Existing Parking*; Table 2.2-3, *Existing Parking*).

TABLE 2.2-1
DESCRIPTION OF LAND USES ON THE PROPERTY

Address	Description	Owner	Primary Land Use
2652 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2654 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2656 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2658 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2609 Pasadena Avenue	Apartments: 2 stories, 10 units	MHS	Mixed Use (Residential)
2611 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2613 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2615 Pasadena Avenue	Apartments: 4 units	MHS	Mixed Use (Residential)
2617 Pasadena Avenue	2 single-family dwellings	MHS	Mixed Use (Residential)
2608-2610 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2618-20-22 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
2624-26 Pasadena Avenue	Land / single-family dwelling	MHS	Mixed Use (Residential)
2630-32 Pasadena Avenue	Land / single-family dwelling	MHS	Mixed Use (Residential)
2640-42 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
527-37 East Willow Street	Land / vacant lot	MHS	Mixed Use
2613 Linden Avenue	Apartments: 2 stories, 9 units	MHS	Mixed Use (Residential)
2627 Linden Avenue	Land / vacant lot	MHS	Mixed Use
2633-35 Linden Avenue	2 single-family dwellings	MHS	Mixed Use (Residential)
2620 Linden Avenue	Apartments: 5 units	MHS	Mixed Use (Residential)
2622-24-26 Linden Avenue	Duplex	MHS	Mixed Use (Residential)
2628 Linden Avenue	Land / vacant lot	MHS	Mixed Use
2630 Linden Avenue	Apartments: 2 stories, 9 units	MHS	Mixed Use (Residential)
2638 Linden Avenue	Apartments: 2 stories, 6 units	MHS	Mixed Use (Residential)
2625 Pasadena Avenue	Research building: 2 stories, 6 lots	MHS	Outpatient
2619-21 Pasadena Avenue	Research building: 2 lots	MHS	Outpatient
2623 Pasadena Avenue	Research building: 1 lot	MHS	Outpatient
2675 Pasadena Avenue	Research building: 1 lot	MHS	Outpatient
2685 Pasadena Avenue	Research building: 1 lot	MHS	Outpatient
2691 Pasadena Avenue	Apartments: Beau Geste,	MHS	Mixed Use



LEGEND

- Accessible Pedestrian Path from Parking Lot to Building Entry
- Parking
- A Staff/Employee
- B Patient/Visitor
- C Patient
- D Doctors
- E Staff/Employee
- F Patient
- G Doctor
- H Patient/Visitor
- I Staff/Employee
- J Staff/Employee and Patient/Visitor
- K Patient/Visitor

FIGURE 2.2-3
Existing Parking

TABLE 2.2-1
DESCRIPTION OF LAND USES ON THE PROPERTY, Continued

Address	Description	Owner	Primary Land Use
	2 stories, 18 units		(Residential)
2608 Pasadena Avenue	Land / vacant lot	MHS	Mixed Use
500 East 27th Street	Guest Residence	MHS	Mixed Use (Residential)
695 East 27th Street, PM 268-46-47, Lots 1 and 2	Clooney / truck property	MHS	Mixed Use
2636, 2638 Elm Avenue	Land / vacant lot	MHS	Mixed Use
2650 Elm Avenue, #301–306	Medical offices (condo)	MHS	Outpatient
2650 Elm Avenue, #307–309	Medical offices (condo)	MHS	Outpatient
2651-2653 Elm Avenue	Land / medical offices	MHS	Outpatient
2685 Elm Avenue	Single-family dwelling	MHS	Mixed Use (Residential)
2690 Elm Avenue	Single-family dwelling	MHS	Mixed Use (Residential)
678 East 28th Street	Storage building: 1 story	MHS	Mixed Use
750 East 29th Street	Genzyme, office building: 1 story	MHS	Outpatient
403 East Columbia Street (Ground Lease)	MRI / lot 38 & ½ vacated lot	MHS	Outpatient
403 East Columbia Street (455 Columbia Street)	Buffums / lots 33–37 & 39–43 / vacated alley	MHS	Outpatient
2680 Long Beach Boulevard	Land / vacant lot	MHS	Mixed use
2684 Long Beach Boulevard	Land / vacant lot	MHS	Mixed use
2690 Long Beach Boulevard	Land / vacant lot	MHS	Mixed use
521 East Columbia Street	Land / E.R. parking lot	MHS	Parking
E.S. Fields, L.B. Heights (Canton Lots)	Land / vacant lots	MHS	Mixed use
300 East Spring Street, P.M. 199-97-98, Lot 1-2, Por. of Lot 2	Land / Buffums parking	MHS	Parking
2085 East Third Street	Transitional rehab	LBMMC	Outpatient
2801 Atlantic Avenue	Hospital Memorial West rehab Outpatient surgery Women's Hospital Miller Children's Hospital Administrative Services Building	LBMMC	Inpatient
2801 Atlantic Avenue	Parking structure: 1,772 spaces	LBMMC	Parking
2801 Atlantic Avenue	Children's parking structure: 150 spaces	LBMMC	Parking
501 East 27th Street	Miller house: 2-story building	LBMMC	Outpatient
2701 Atlantic Avenue	Pain Management: 1-story office building	LBMMC	Outpatient
Parking lot on 27th Street	Parking lot next to 2699 Atlantic Avenue (no data)	LBMMC	Parking

TABLE 2.2-2
EXISTING CONDITIONS: GROSS FLOOR AREAS

Building Number per Existing Building Plan[1]	Building	Gross Floor Areas (Square Foot)
1	Miller Children's Hospital	175,162
2	Long Beach Memorial Medical Center	697,630
3	Administration Building	129,531
4	Memorial West Facility (Rehab)[2]	107,622
5	Miller House	25,000
6	Ranch House / WIC Medical Center	12,000
8	Memorial Guest Residence Hotel	12,000
9	Research Building	20,000
17	Buffums Plaza	35,000
	Total	**1,213,945**

NOTE:
[1] Building numbers as shown on diagram. Source: Taylor, July 2004. "Existing Buildings." Contact: Taylor, 2220 University Drive, Newport Beach, CA 92660.
[2] Gross floor area of the Memorial West Facility includes the Rehab center (31,167 square feet).

TABLE 2.2-3
EXISTING PARKING

	Staff/Employee Spaces	Patient/Visitor Spaces	Doctor Spaces	Total Spaces
Existing Parking Demand				3,193
Existing Parking Supply				3,452
Lot A	675	—	—	675
Lot B	—	217	—	217
Lot C	—	74	—	74
Lot D	—	—	28*	28
Lot E	85	—	—	85
Lot F	—	26	60	86
Lot G	—	—	87	87
Lot H	—	29	—	29
Lot I	150	—	—	150
Lot J	1,430	164	—	1,594
Lot K	—	427	—	427
Subtotal	2,340	937	175	3,452
Existing Parking Surplus				259

NOTE:
* Spaces shared with patients and visitors.

2.3 STATEMENT OF OBJECTIVES

The LBMMC Campus is the second largest private hospital on the West Coast and has served the Long Beach community and Southern California since 1914. Being a comprehensive medical campus, it combines the resources of six major entities: the LBMMC, MCH, Memorial Women's Hospital, Memorial Rehabilitation Hospital, Memorial Heart Institute, and Memorial Cancer Institute. The proposed expansion of the facilities and services would be undertaken to provide a full range of integrated medical facilities. It is vital to the community's health that the LBMMC be given the opportunity to achieve this vision. The LBMMC has defined their goals and supporting objectives related to the proposed project as follows:

Goal: The LBMMC is a nonprofit hospital and is committed to improving the health and well-being of individuals, families, and the community through innovation and the pursuit of excellence, and to making LBMMC into Southern California's preferred, operationally excellent, and fiscally sound provider of comprehensive, high-quality health services.

Objectives: The LBMMC has identified and prioritized 12 basic objectives that are important to achieving the project goal:

1. Continue the legacy of providing a high-quality environment that supports the health and well-being of patrons through the provision of a comprehensive system of programs and facilities that provide prevention, screening, diagnosis, treatment, and monitoring services to meet existing and anticipated demand in the community through the year 2020.

2. Expand and reorganize the existing approximately 1,200,000 square feet of combined inpatient, outpatient, and appurtenant facilities by approximately 500,000 square feet to accommodate existing and anticipated demand through the year 2020.

3. Comply with the regulations developed by the Office of Statewide Health Planning and Development (OSHPD) as mandated by Senate Bill 1953 (Chapter 740, 1994), an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983.[3]

4. Consolidate and relocate the diverse outpatient treatment modalities of the Todd Cancer Institute (TCI) that are currently dispersed in 24 sites located on and off the Campus, to a single facility in proximity to the inpatient services provided at the LBMMC.

5. Provide a dedicated facility for the outpatient well care, screening, imaging, diagnosis, treatment, and monitoring of cancer and non-cancer patients to accommodate the anticipated need for 375 patients to be served per day by the year 2007, and to accommodate approximately 500 patients per day to meet anticipated needs through the year 2020.

[3] Senate Bill (SB) 1953 established seismic requirements for existing hospitals in California and was signed into law in September 1994. This bill requires existing general acute care hospital buildings that are not in compliance with the Alfred E. Alquist Hospital Seismic Safety Act of 1983 (generally buildings with permits prior to 1973) to be either seismically retrofitted, changed to non-acute care use, replaced, or demolished. This is to be accomplished for all California hospital facilities by year 2030.

6. In the immediate proximity of the MCH, provide a pediatric inpatient tower that would increase capacity for pediatric surgical cases that would satisfy a mandate from the California Department of Health Services to provide seven operating rooms by January 2008. An additional three operating rooms would need to be provided between years 2008 and 2015 to meet anticipated demand through the year 2020.

7. In the immediate proximity of the MCH, provide a pediatric inpatient tower that would increase capacity for newborn intensive care services and general pediatric patients. The new pediatric inpatient tower will be sized to accommodate the 10-percent increase in the need for pediatric inpatient treatment of children under the age of 15 between years 2000 and 2003, and the projected additional increase of 1 percent per year through the year 2020. The increase in capacity would require 72 additional beds by the year 2008 and another 92 additional beds between years 2008 and 2015 to meet anticipated demand through the year 2020.

8. Consolidate and relocate the diverse pediatric outpatient services, well care, screening, diagnosis, treatment, and monitoring into a single, dedicated building in close proximity to the MCH.

9. Within the Campus, provide a building designated for mixed uses to accommodate retail uses, such as a gift shop, florist, and food and beverage service, to serve MCH employees, patients, and visitors.

10. Provide adequate access and egress to the Campus from Long Beach Boulevard and Atlantic Avenue.

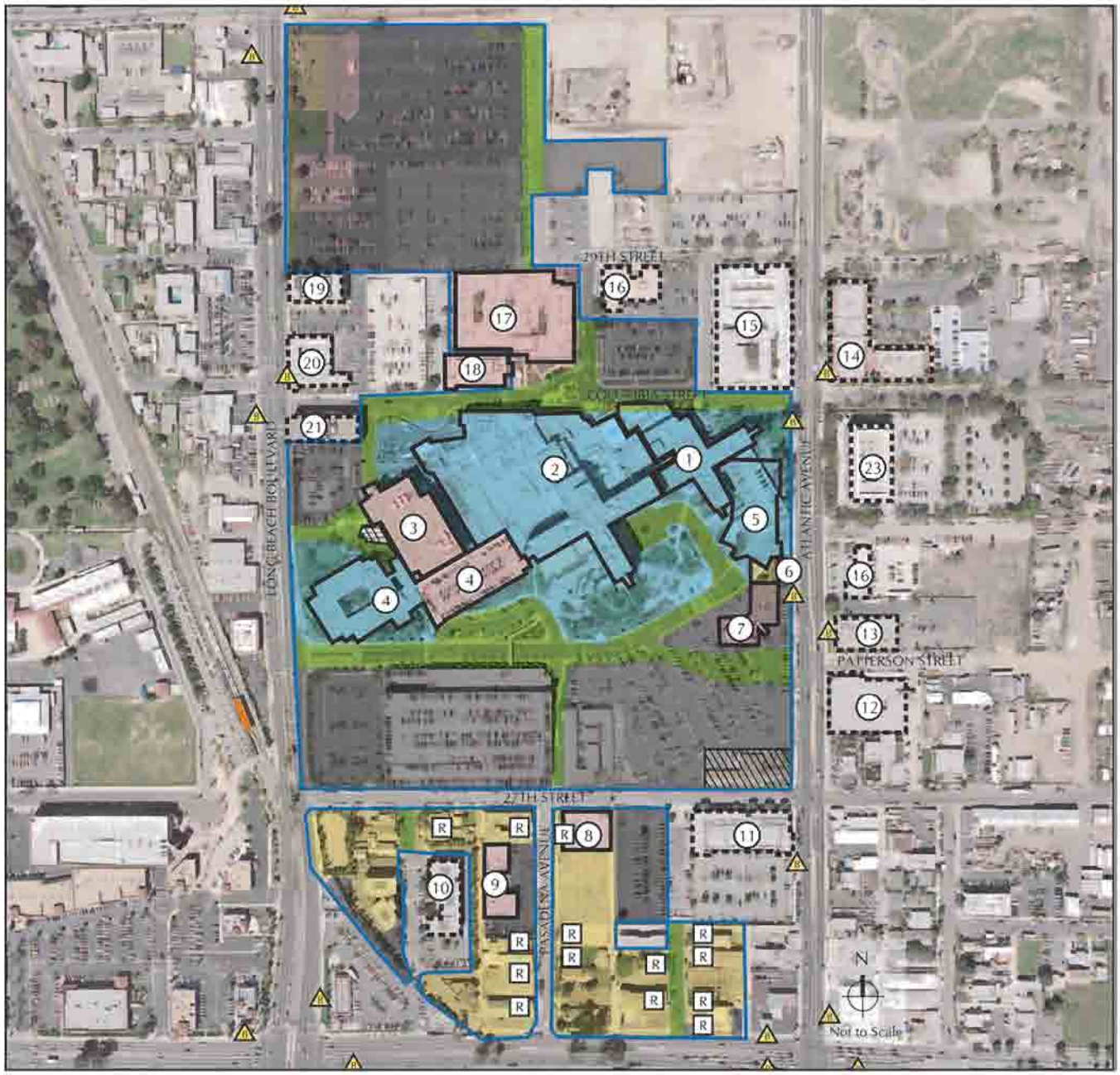
11. Provide adequate infrastructure to support circulation within the Campus.

12. Provide sufficient parking capacity to comply with the City of Long Beach parking ordinance.

2.4 PROPOSED PROJECT

The proposed project consists of a 2005 Master Plan (Appendix A, *Master Plan*) that specifies a Master Plan of Land Uses that provides a conceptual framework for the reorganization of the six existing land uses: (1) inpatient medical facilities, (2) outpatient medical facilities, (3) mixed-use facilities, (4) utilities, (5) circulation, and (6) parking (Figure 2.4-1, *Proposed Master Plan of Land Uses*). Within this conceptual framework, six proposed project elements could be constructed within the next 5 to 10 years:

1. Todd Cancer Institute
2. Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building
3. Miller Children's Hospital—Pediatric Outpatient Building
4. Miller Children's Hospital—Link Building
5. Roadway Realignment
6. Parking Program



LEGEND

- Inpatient
- Outpatient
- Mixed Use
- Utilities
- Circulation
- Parking
- LBMMC Boundary
- Buildings Controlled by LBMMC
- Buildings Controlled by Others
- Blue Line (Willow Station)
- Bus Stop (Long Beach Transit)
- (1) Miller Children's Hospital
- (2) Long Beach Memorial Medical Center
- (3) Administration Building
- (4) West Facility/Rehabilitation Building
  Rehabilitation Gym/Parking
- (5) Pediatric Inpatient Tower
- (6) Link Building
- (7) Pediatric Outpatient Building
- (8) Memorial Guest Residence
- (9) Research Building
- (10) Elm Medical Plaza
- (11) 3-Story Medical Office Building
- (12) Convalescent Home
- (13) MOB with CT & MRI Orthopedics
- (14) Hillside Medical Plaza
- (15) 2-Story Atlantic MOB
- (16) Medical Office Building - 1 Story
- (17) Buffums Plaza - 1 Story
- (18) CT & MRI Center
- (19) Medical Office Building
- (20) Aloha Motel
- (21) Medical Office Building
- (23) 4-Story Altantic MOB
- R Residential Buildings

FIGURE 2.4-1
Proposed Master Plan of Land Uses

The TCI would facilitate expansion of the Campus by relocating cancer treatment programs currently located within the licensed hospital facility and other diverse locations to a single building dedicated to cancer treatment programs. The comprehensive expansion of the MCH would ultimately consist of three new buildings: the pediatric inpatient tower, the pediatric outpatient building, and the link building (Figure 2.4-2A*, Miller Children's Hospital Expansion Phase I South and East Elevation*; Figure 2.4-2B*, Miller Children's Hospital Expansion Phase I South and West Elevations*; and Figure 2.4-2C*, Miller Children's Hospital Expansion Phase II South and East Elevation*). As required by the OSHPD, the MCH pediatric inpatient tower would be supported by a dedicated central plant building connected via an underground utility trench. Memorial Medical Center Drive / Patterson Street would need to be realigned to the south to accommodate the proposed MCH improvements. The combined effects of displaced parking from new construction and additional trips generated through the expanded capacity of the hospital require the provision of additional parking. LBMMC has developed a parking program to provide additional capacity. The parking program requires conversion of mixed-use properties, including demolition of the existing childcare center, demolition of 51 residential units, and development of 12 vacant lots.

The total estimated cost of capital improvements is in excess of $276 million (Table 2.4-1, *Estimated Capital Improvement Costs*).

TABLE 2.4-1
ESTIMATED CAPITAL IMPROVEMENT COSTS

Project Element	Total Cost in Million
Todd Cancer Institute, Phase I	$34.30
Todd Cancer Institute, Phase II	$17.30
Miller Children's Hospital—Pediatric Inpatient Tower, Phase I	$92.00
Miller Children's Hospital—Pediatric Inpatient Tower, Phase II	$61.30
Utility Trench	$1.00
Central Plant Building	$5.00
Miller Children's Hospital—Pediatric Outpatient Building	$19.00
Miller Children's Hospital—Link Building	$14.20
Roadway Realignment	$3.00
Parking Program	
• On-site parking (N, P, Q, R, S, and T) 515 spaces at $10,000 per car space	$5.15
• 1,700 space structure at $14,000 per car space	$23.80
TOTAL COST	**$276.05**

NOTE:
All costs are at 2004 dollar value.

2.4.1 Master Plan of Land Uses

The proposed Master Plan of Land Uses provides a conceptual framework for the reorganization of the pattern of land uses within the Campus to meet the identified immediate needs and anticipated long-term needs of the Campus and community through the year 2020 (Appendix A and Table 2.4.1-1, *Anticipated 2005 Master Plan Projects*). The ability to fulfill this mission requires the establishment of a Long-Range Development Plan for the Campus. The City of Long Beach Zoning Code, Section 21.34.020,[4] requires that all sites zoned as Institutional and having an area greater than 40,000 square

[4] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

Note: Conceptual massing study. Buildings will be designed in accordance with the design guidelines specified in the 2005 Master Plan (Appendix A).

FIGURE 2.4-2A
Miller Children's Hospital Expansion Phase I South and East Elevation

Note: Conceptual massing study. It shows Phase II of MCH Pediatric Inpatient Building. The buildings wil be designed in accordance with the design guidelines specified in the 2005 Master Plan (Appendix A).

FIGURE 2.4-2B
Miller Children's Hospital Expansion Phase I South and West Elevations

Note: Conceptual massing study. Buildings will be designed in accordance with the design guidelines specified in the 2005 Master Plan (Appendix A).

FIGURE 2.4-2C
Miller Children's Hospital Expansion Phase II South and East Elevation

feet in the City of Long Beach to submit a Long-Range Development Plan that includes all development of the site and site expansions (within a zone designated as Institutional or under the institution's ownership, whichever is greater) anticipated over the next 20 years. As such, this 2005 Master Plan would normally be prepared to address planning needs through the year 2025. However, the City of Long Beach General Plan provides planning and demographic data through the 2020 planning horizon. Therefore, this 2005 Master Plan incorporates considerations from the previously adopted 1999 Master Plan, and provides land use designations, recommended capital improvements, and design guidelines to provide for the orderly and compatible development of the Campus to meet the needs of the community through the 2020 planning horizon, consistent with the City's General Plan.

It is set forth in Section 21.34.020 of the Zoning Code that all future projects must be consistent with the approved Long-Range Development Plan. The proposed land uses are consistent with the existing land use designation (LUD) No. 7 Mixed-Use District in the General Plan and with the Institutional zoning. LBMMC has requested the City to extend the eastern edge of the Planned Development (PD-29) zoning, between Spring Street (on the north) and 29th Street (on the south) to Pasadena Avenue. That land is currently zoned as a Regional Highway (CHW) District. However, the land owned by LBMMC between 27th Street (to the north) and Willow Street (to the south), currently zoned as CHW and as a Community Automobile-Oriented District (CCA), would maintain the existing zoning as it accommodates the proposed uses. In addition to revising the Master Plan of Land Uses and zoning, the 2005 Master Plan (Appendix A) provides design guidelines, a landscape plan (Figure 2.4.1-1, *Landscape Plan*), and a pedestrian plan (Figure 2.4.1-2, *Pedestrian Plan*) to guide the planning and design of six capital improvement projects recommended to meet community needs through the year 2020 planning horizon.

TABLE 2.4.1-1
2005 MASTER PLAN ANTICIPATED PROJECTS

Project Title	Total Square Feet / Number of Stories	Anticipated Construction Start Date / Completion Date
TCI Phase I TCI Phase II	83,630 / 3 stories 42,300 / 2 stories	July 2005 / September 2006 July 2010 / June 2011
MCH pediatric inpatient tower Phase I	124,500 / 4 stories	October 2005 / January 2008
MCH pediatric inpatient tower Phase II	73,500 / 3 stories	January 2012 / June 2013
Utility trench	1,000 linear feet, underground	July 2005 / January 2008
Central plant building	3,500 / 1 story	June 2006 / August 2007
MCH pediatric outpatient building	80,000 / 5 stories	October 2005 / May 2007
MCH link building	20,000 / 3 stories	July 2010 / June 2011
Roadway realignment	820 linear-feet	July 2005 / October 2005
Parking program	2,187 parking spaces	July 2005 / December 2007

FIGURE 2.4.1-1
Landscape Plan

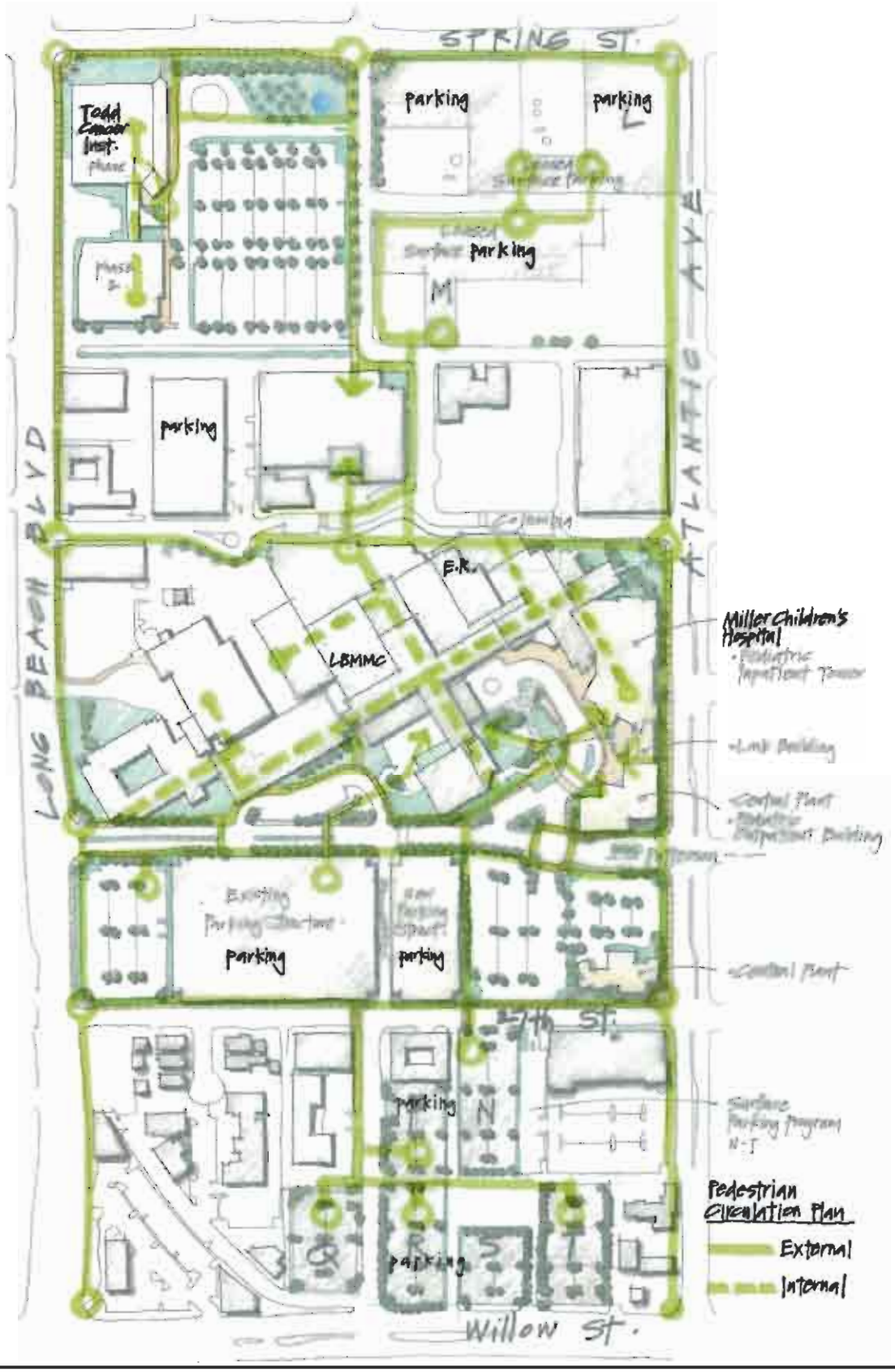


FIGURE 2.4.1-2
Pedestrian Plan

2.4.2 Todd Cancer Institute

The TCI would be located on the northwestern corner of the Campus, southeast of the intersection of Long Beach Boulevard and Spring Street (Figure 2.4.2-1, *Todd Cancer Institute Conceptual Site Plan*). The existing land use at this location is an 872-stall surface parking lot. The TCI building would provide comprehensive outpatient cancer services in a single facility designed for the unique requirements of cancer patients and their families. (Figure 2.4.2-2A*, Todd Cancer Institute North and South Elevations*, and Figure 2.4.2-2B*, Todd Cancer Institute West and East Elevations*). These services are currently provided in approximately 24 distinct locations distributed throughout the Campus and in nearby, leased facilities (Figure 2.4.2-3, *Proposed Consolidation of TCI Services*). The TCI building would also be designed to reinforce a sense of arrival to the northern edge of the Campus. Employees, medical staff, and patients would access the TCI from entry driveways on Pasadena Avenue. The driveway would be adequately sized to accommodate service of delivery vehicles. Outpatient cancer services would ultimately encompass approximately 125,930 gross square feet of new space constructed in two phases.

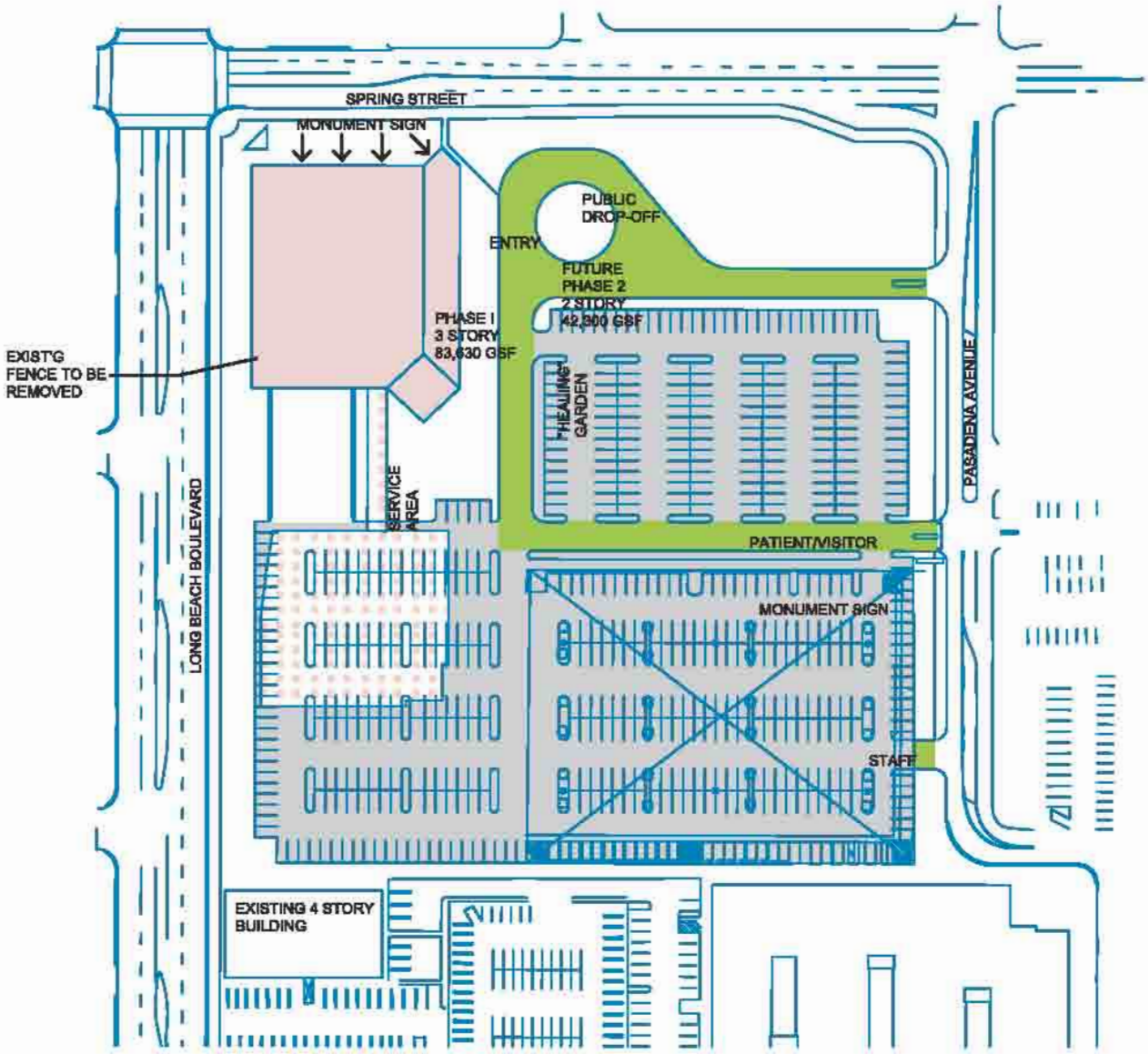
Landscaping would be provided along Long Beach Boulevard and Spring Street frontages consistent with City of Long Beach requirements and with the design guidelines for landscaping as contained in the 2005 Master Plan (Appendix A) for the Campus. Landscaping within the Campus would be consistent with existing Campus landscaping. A healing garden would be developed adjacent to the TCI on the east side of the building. Amenities and plant selections would be sensitive to the needs of cancer patients and would accentuate the healing and medicinal properties of certain plants.

Phase I of the TCI would provide 83,630 gross square feet in a 54-foot-high, three-story building and an atrium featuring a 70-foot-high skylight. The building would be identified by two illuminated building signs reading "Todd Cancer Institute" and by ground-level monument signage. The Phase I portion of the building would require 418 parking spaces. It is anticipated that there would be a maximum of approximately 120 employees working in the building at one time. Phase I of the TCI is proposed to initiate construction in July 2005. Upon completion of Phase I in September 2006, the undeveloped portions of the site would accommodate approximately 701 parking stalls.

Phase II would provide an additional 42,300 gross square feet in a new 33-foot-high, two-story horizontal expansion. The Phase II portion of the building would require 212 parking spaces. Upon completion of Phase II, the undeveloped portions of the site would accommodate approximately 633 parking stalls. It is anticipated that there would be a maximum of approximately 60 additional employees working in the building at one time. Construction of Phase II of the TCI is contingent on the growth of outpatient cancer services, the needs of the Long Beach community, and philanthropy. The likely dates to initiate and complete construction are July 2010 through June 2011.

2.4.3 Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building

The expansion of MCH, through the addition of a pediatric inpatient tower, would be located immediately adjacent to the existing MCH facility, southwest of the intersection of Atlantic Avenue and Columbia Street (Figure 2.4.3-1, *Miller Children's Hospital Expansion*). The existing land use at this location is an 86-stall, multilevel parking structure. The parking structure would be demolished to accommodate the proposed pediatric inpatient tower. Access to the pediatric inpatient tower would be provided on multiple floors of the existing MCH facility and by a new pedestrian entrance on the west facade of the building. At build-out, the MCH would provide approximately 205,250 gross square feet



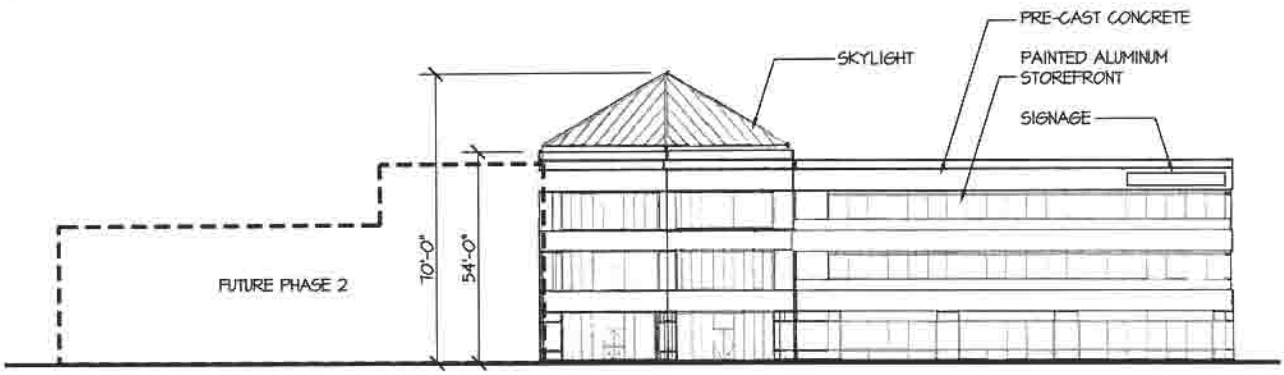
LEGEND

- Phase I
- Phase II
- Circulation
- Parking

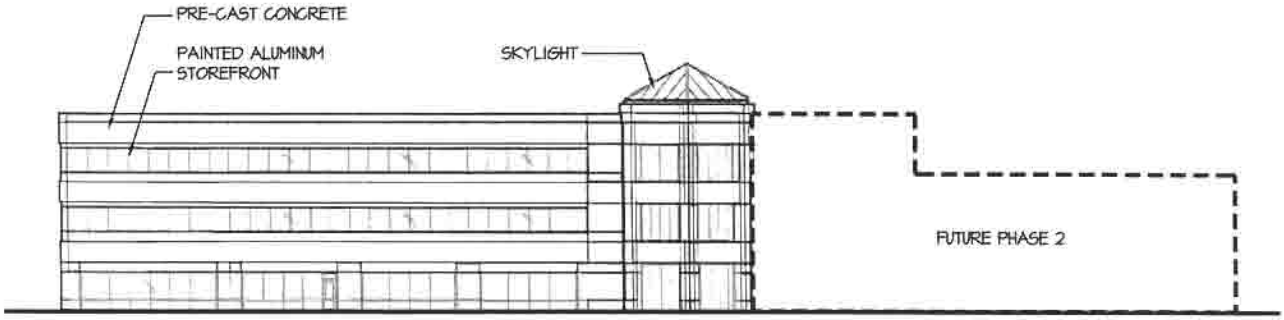
Phase I
Building Area: 83,630 SF

Phase 2
Building Area: 45,300 SF

FIGURE 2.4.2-1
Todd Cancer Institute Conceptual Site Plan



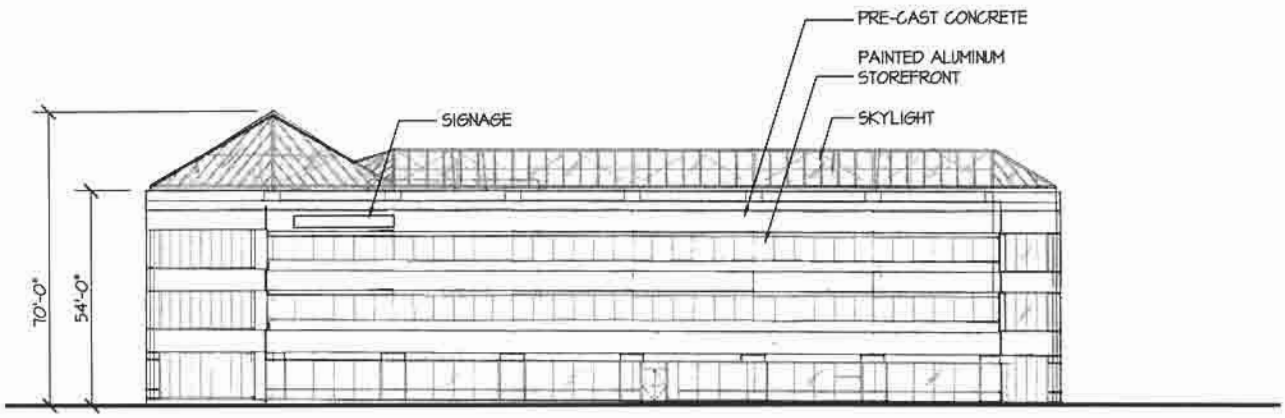
NORTH ELEVATION



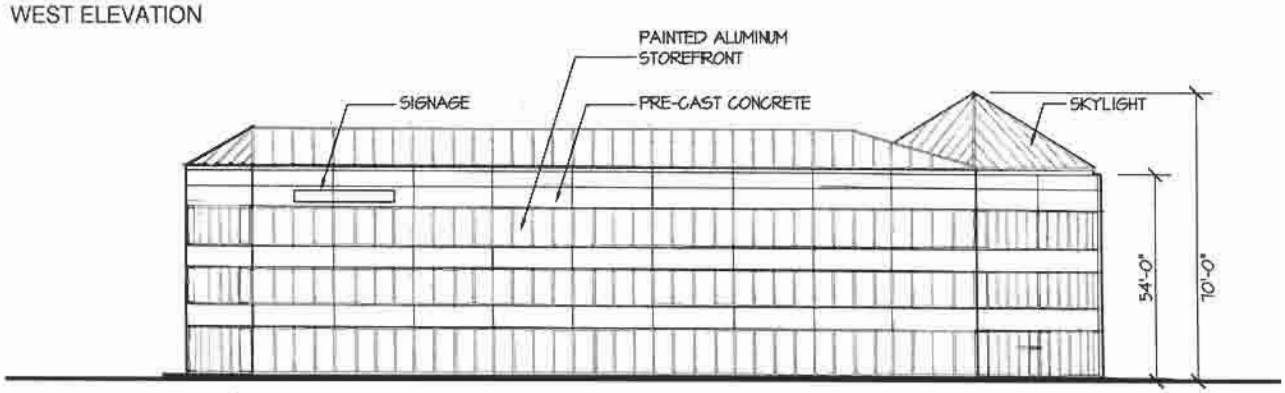
SOUTH ELEVATION

0 30' 60'

FIGURE 2.4.2-2A
Todd Cancer Institute North and South Elevations



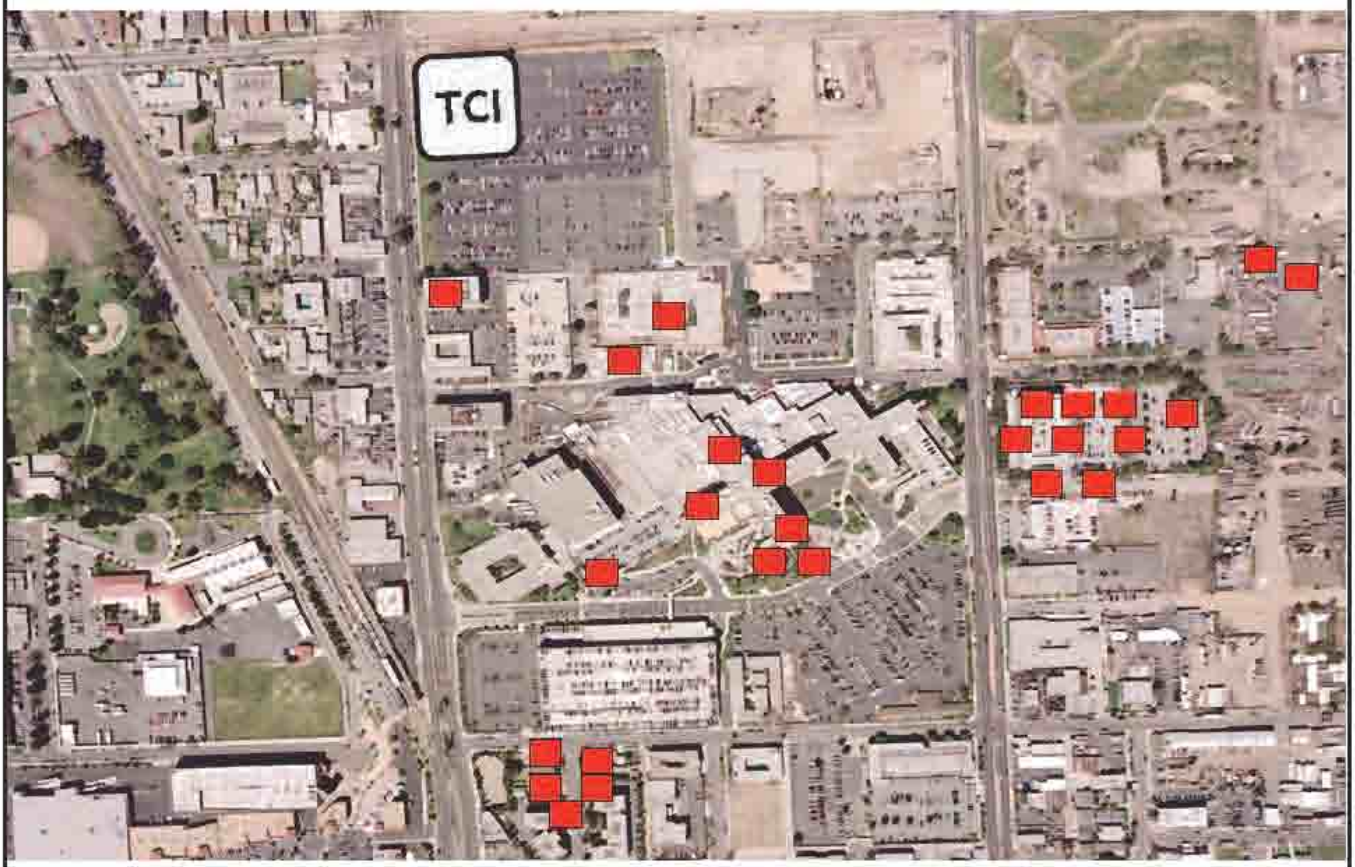
WEST ELEVATION



EAST ELEVATION

0 30' 60'

FIGURE 2.4.2-2B
Todd Cancer Institute West and East Elevations



SOURCE: Long Beach Memorial Medical Center

LEGEND

TCI Proposed Location TCI

Existing Location for TCI Services

FIGURE 2.4.2-3
Proposed Consolidation of TCI Services

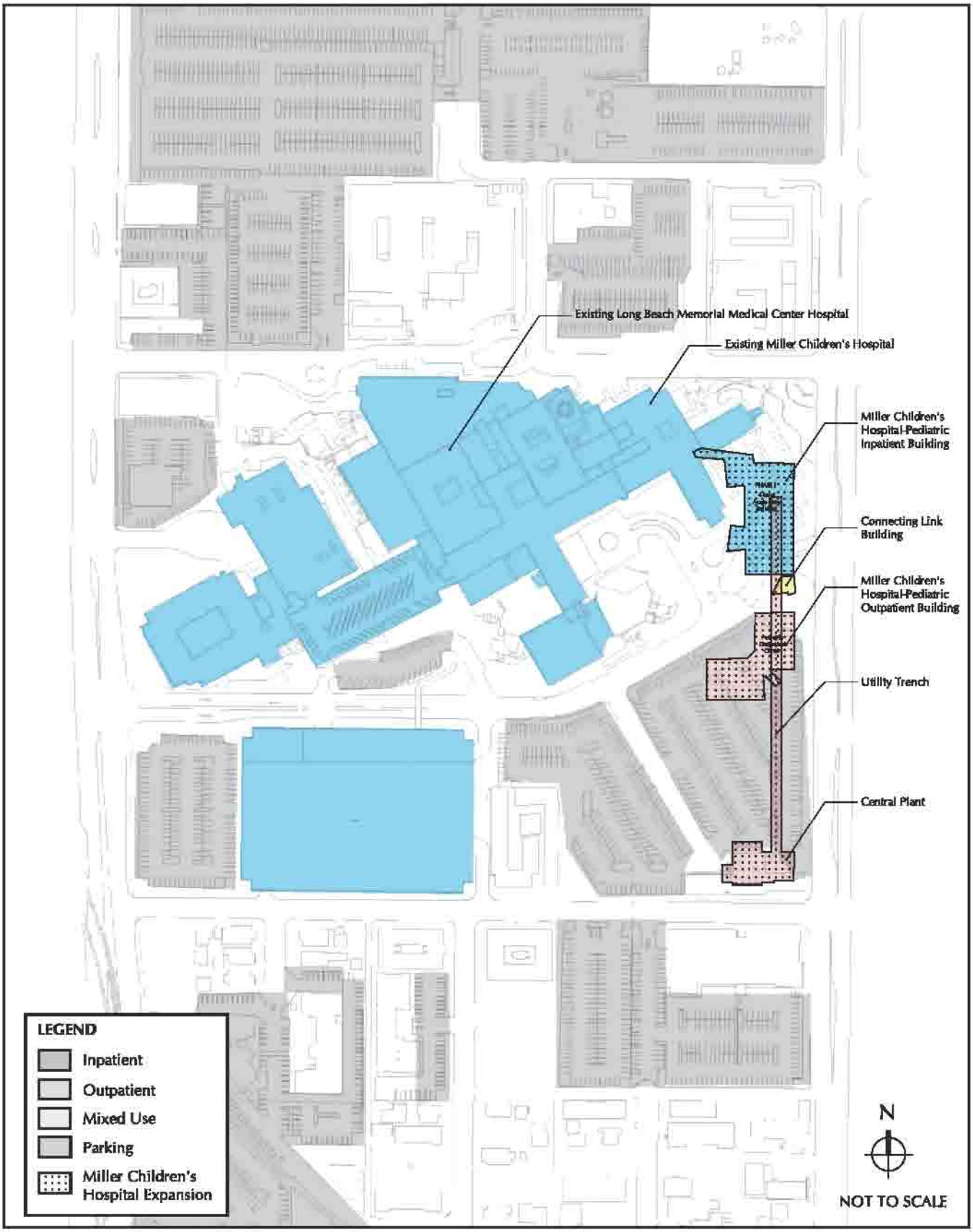


FIGURE 2.4.3-1
Miller Children's Hospital Expansion

(Figure 2.4.3-2A, *Miller Children's Hospital Pediatric Inpatient Building North and East Elevation*, and Figure 2.4.3-2B, *Miller Children's Hospital Pediatric Inpatient Building South and West Elevation*).

Phase I of the MCH pediatric inpatient tower would provide approximately 129,220 square feet of new space for pediatric surgical services, imaging, lobby, newborn intensive care services, and general pediatric inpatient care services. It is anticipated that there would be a maximum of approximately 310 employees working in the building at one time. Phase I would consist of a four-story building with one story below grade and three stories above grade. The highest point of the Phase I structure would be approximately 84 feet above grade. The building would be identified by three illuminated building signs reading "Miller Children's Hospital" and by ground-level monument signs. The Phase I portion of the building would require 144 parking spaces. Phase I of the new pediatric inpatient tower is proposed to initiate construction in October 2005, with completion in January 2008. Phase II would provide approximately 86,030 square feet in a four-story vertical expansion of the Phase I structure. The highest point of the combined Phase I and Phase II structure would be approximately 148 feet above grade. The Phase II portion of the building would require 192 parking spaces. Construction of Phase II is contingent on the growth of inpatient pediatric cancer services, the needs of the Long Beach community, and philanthropy. The likely dates to initiate and complete construction of Phase II of the MCH pediatric inpatient tower are January 2012 and June 2013, respectively.

Landscaping would be provided along Atlantic Avenue and 27th Street frontages consistent with City of Long Beach requirements and with the design guidelines for landscaping as contained in the 2005 Master Plan (Appendix A) for the Campus. Landscaping within the Campus would be consistent with existing Campus landscaping.

A central plant building designed to support Phases I and II of the new pediatric inpatient tower would be constructed northwest of the intersection of Atlantic Avenue and 27th Street (Figure 2.4.3-3A, *Miller Children's Hospital—Pediatric Inpatient Building, Central Plant: North and East Elevations*, and Figure 2.4.3-3B, *Miller Children's Hospital—Pediatric Inpatient Building, Central Plant: South and West Elevations*). The existing land use at this location is a small, wood-framed building referred to as the "WIC Building" and "Ranch House" on the southeastern portion of the surface parking lot located north of 27th Street. The uses currently provided at the Ranch House include women's, children's, and infant food and nutrition programs, and would be relocated elsewhere at the Campus prior to the initiation of demolition activities. Development of the central plant building within a portion of the existing surface parking lot would displace 14 parking spaces. The central plant building would consist of a single-level structure of approximately 3,500 square feet and approximately 5,000 gross square feet of open yard, plus eight parking stalls. Construction of the central plant building is proposed to begin in June 2006 and finish in August 2007. The central plant building would contain equipment and storage for the provision of emergency power, chilled water, and bulk medical oxygen for the inpatient tower. The central plant building would be staffed by existing engineering staff; therefore, no additional parking would be required for the central plant building. Vehicular access to the central plant building would be from 27th Street.

The inpatient pediatric tower would be served by the central plant building via a 1,000-linear-foot underground utility trench along the eastern edge of the Campus, parallel to Atlantic Avenue. Utility piping between the central plant building and the inpatient tower would be direct buried within a protected, slurry back-filled trench. The utility trench would be a permanent, underground facility that would not generate any additional demand for parking; therefore, no additional parking would be required for the utility trench.

North Elevation
As seen from Columbia Street

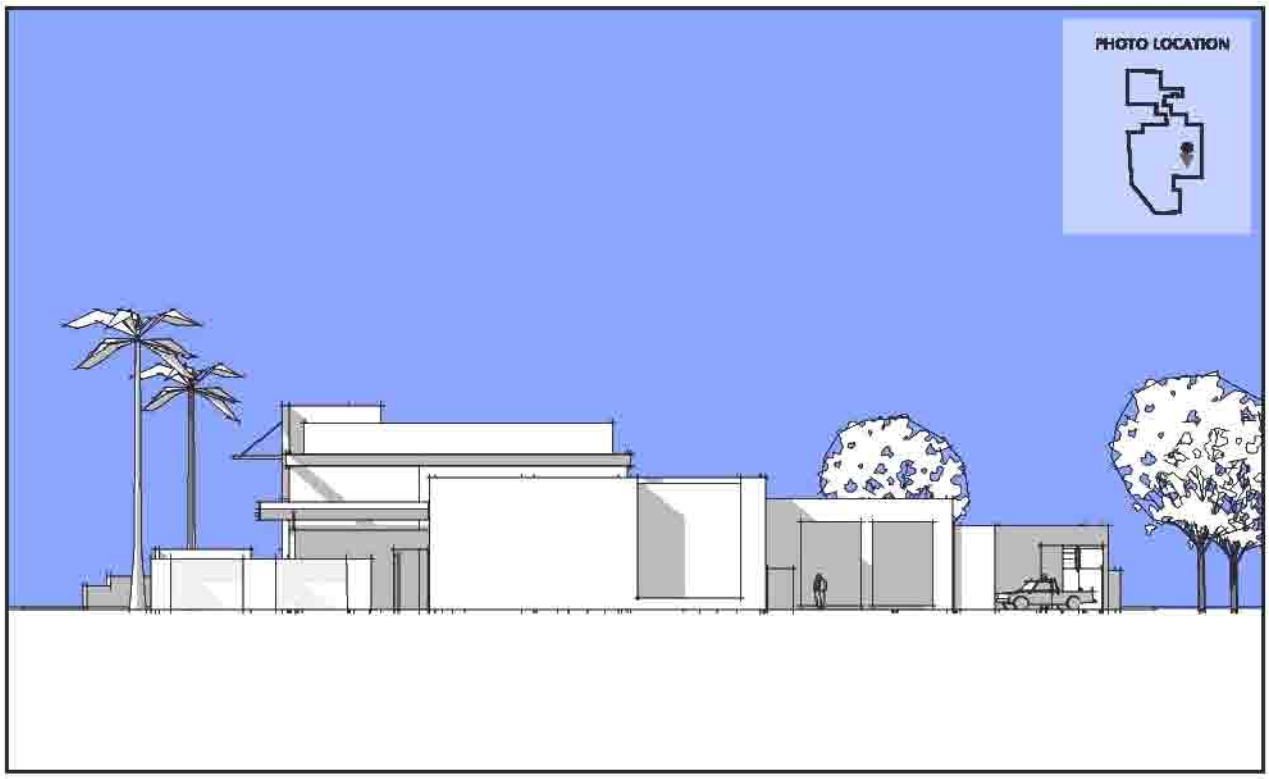
East Elevation
As seen from Atlantic Avenue

FIGURE 2.4.3-2A
Miller Children's Hospital Pediatric Inpatient Building North and East Elevation

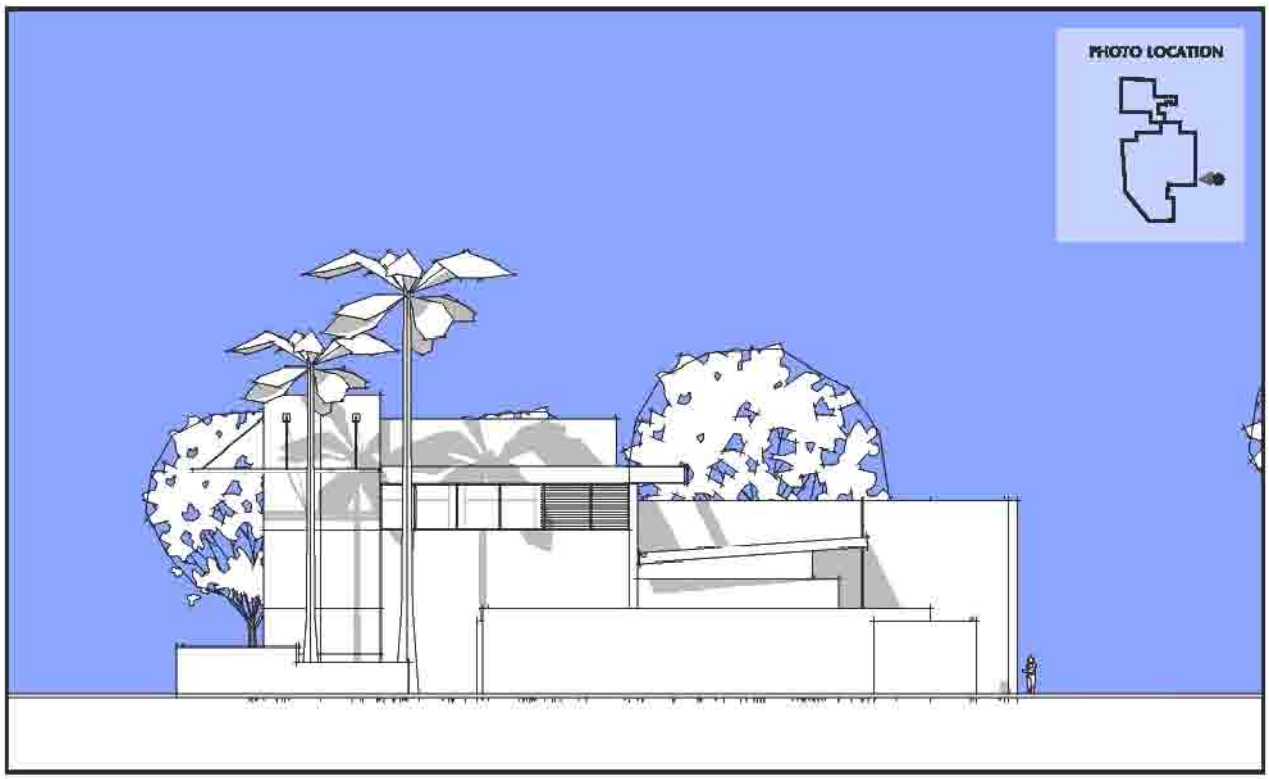
South Elevation
As seen from Memorial Drive/Patterson Street

West Elevation
As seen from Miller Children's Hospital Courtyard

FIGURE 2.4.3-2B
Miller Children's Hospital Pediatric Inpatient Building South and West Elevation

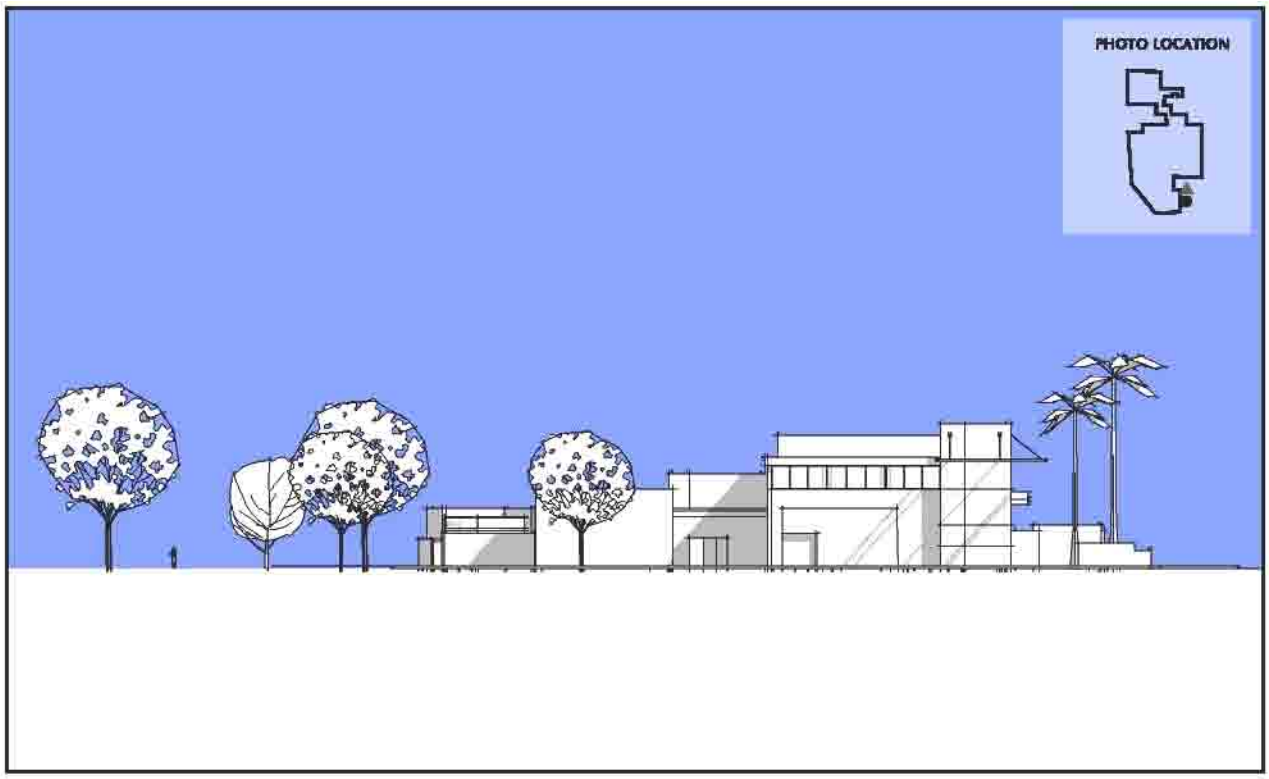


North Elevation
As seen from Parking Lot K

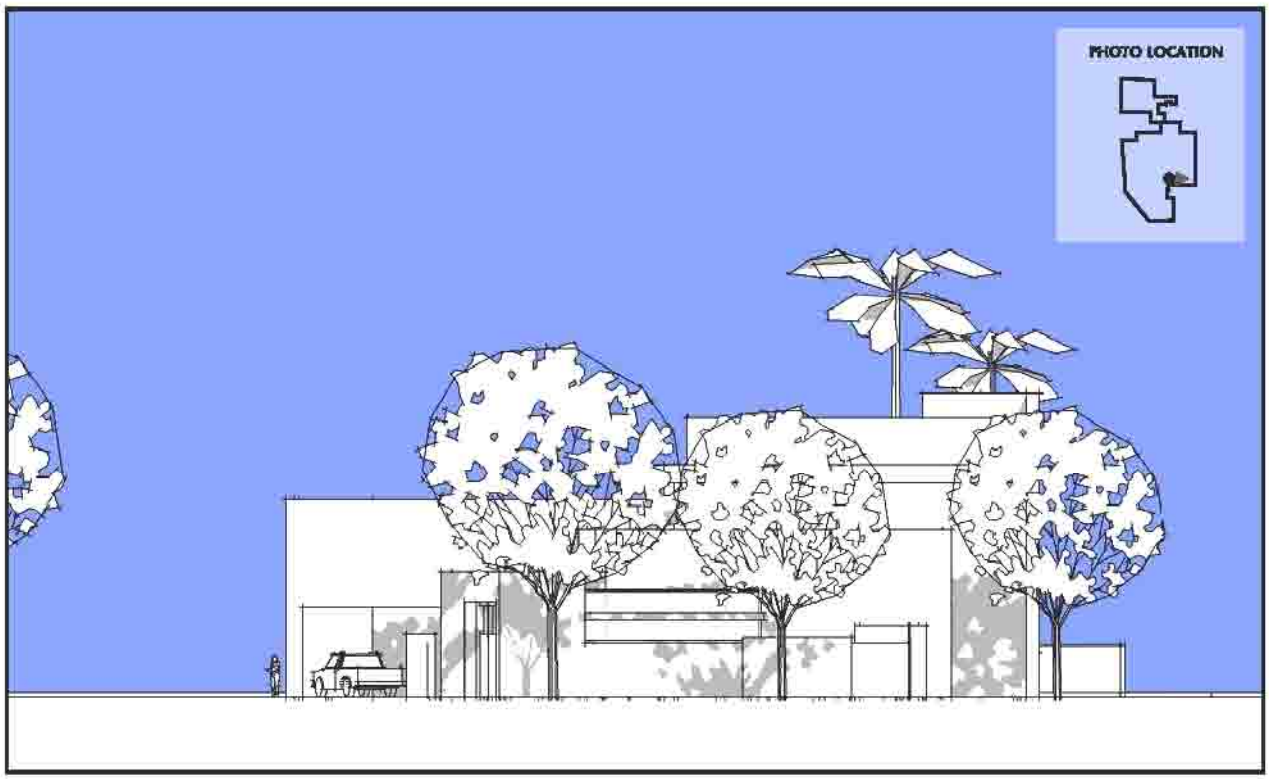


East Elevation
As seen from Atlantic Avenue

FIGURE 2.4.3-3A
Miller Children's Hospital - Pediatric Inpatient Building
Central Plant: North and East Elevation



South Elevation
As seen from 27th Street



West Elevation
As seen from Parking Lot K

FIGURE 2.4.3-3B
Miller Children's Hospital - Pediatric Inpatient Building
Central Plant: South and West Elevation

2.4.4 Miller Children's Hospital—Pediatric Outpatient Building

A new pediatric outpatient building would be located south of the existing MCH facility, west of Atlantic Avenue, and approximately midway between Columbia Street and 28th Street (Figure 2.4.3-1). The existing land use at this location is a portion of the surface parking lot located north of 28th Street. Approximately 43 parking spaces would be demolished to accommodate the proposed pediatric outpatient building. Pedestrian access to the outpatient building would be provided from an entrance on the northwest facade of the building. The MCH outpatient building would provide approximately 80,000 gross square feet (Figures 2.4-2A, 2.4-2B, and 2.4-2C). The pediatric outpatient building would consist of a five-story, B-occupancy, medical office building housing an array of pediatric care clinics and support services. It is anticipated that there would be a maximum of approximately 140 employees working in the building at one time. The highest point of the building would be approximately 84 feet above grade. The MCH pediatric outpatient building is proposed to initiate construction in October 2005 and finish construction in May 2007. The building would be developed as a shell building, with internal tenant improvements for MCH-operated services and private physician practices. Four types of uses and clinics are under consideration for the outpatient pediatric building: (1) dental clinic, (2) pediatric rehabilitation, (3) children's and specialty care clinic, and (4) support space, including physician's offices.

Landscaping would be provided along the Atlantic Avenue frontage consistent with City of Long Beach requirements and with the design guidelines for landscaping as contained in the 2005 Master Plan (Appendix A) for the Campus. Landscaping within the Campus would be consistent with existing Campus landscaping.

The pediatric outpatient building would require approximately 400 parking spaces. Construction of the pediatric outpatient building is contingent on the identification of funding, philanthropy, and lease agreements with private physician groups.

2.4.5 Miller Children's Hospital—Link Building

A new mixed-use building connecting the pediatric inpatient tower and the pediatric outpatient building would be located southwest of the intersection of Atlantic Avenue and 28th Street (Figure 2.4.3-1). The existing land use at this location is the existing Memorial Drive access road that would accommodate the proposed inpatient tower. Access to the mixed-use building would be provided on multiple floors from the inpatient hospital to the north and the outpatient building to the south. Grade-level pedestrian entrances would also be provided on the east and west facades. The MCH link building would provide approximately 20,000 gross square feet (Figures 2.4-2A, 2.4-2B, and 2.4-2C). The link building tower would consist of a 50-foot-high, three-story building that would contain retail spaces, offices, and retail food service for the users of the adjacent inpatient tower and outpatient building. Nonresidential space would be provided. The MCH link building is proposed to initiate construction in July 2010 and finish construction in June 2011.

Landscaping would be provided along the Atlantic Avenue frontage consistent with City of Long Beach requirements and with the design guidelines for landscaping as contained in the 2005 Master Plan (Appendix A) for the Campus. Landscaping within the Campus would be consistent with existing Campus landscaping.

The mixed-use building would require 50 parking spaces. Construction of the link building is contingent on the identification of a funding source.

2.4.6 Roadway Realignment

Vehicular and pedestrian circulation patterns would be improved through the realignment of selected internal roadways and through a signage and wayfinding program (Figure 2.4.6-1, *Central Plant, Utility Trench, and Roadway Realignment*). Specifically, a 520-linear-foot section of the alignment of Patterson Street/Memorial Medical Campus Drive as it extends through the Campus would be realigned southward by approximately 300 feet from its current intersection, at Atlantic Avenue near 28th Street on the east side of the Campus, to make a closer connection with the existing alignment of Patterson Street at Atlantic Avenue. As a result, the intersection of Atlantic Avenue and 28th Street would become a T-intersection. The roadway would consist of three site entry lanes and three site exit lanes with an automated traffic control gate for each lane. The present roadway is approximately 85 feet wide at Atlantic Avenue. The roadway would narrow to 40 feet where it transitions to the existing alignment of Patterson Street near Pasadena Avenue. The road curvature has a radius of approximately 500 feet to transition from Patterson Street to the existing roadway alignment. The roadway realignment would result in the loss of 195 parking spaces from the surface parking lot located north of 27th Street. The existing T-intersection at Atlantic Avenue and Patterson Street would be replaced by a signalized through intersection. The grading and realignment would be undertaken such that the roadway and curbs are adjusted to provide access to adjacent buildings at the first-floor level. The roadway realignment is proposed to initiate construction in July 2005 and finish construction in October 2005.

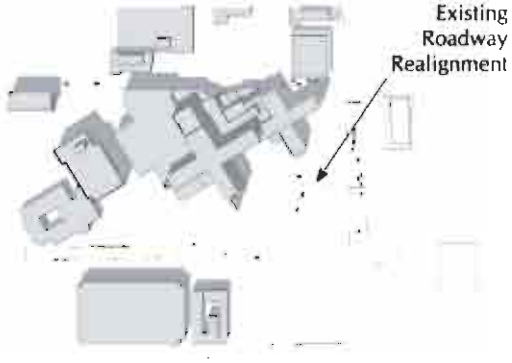
2.4.7 Parking Program

A phased parking program would be designed to offset the 577 parking spaces permanently displaced by the proposed project and accommodate the additional demand for 1,153 parking stalls resulting from the expansion project components and the additional 189 parking spaces that would be lost from construction of a parking structure within Lot K. It is anticipated that the phased parking program would consider the use of surface parking areas on property owned by the LBMMC (Figure 2.4.7-1, *On-Site Parking Opportunities*), nearby off-site surface parking areas (Figure 2.4.7-2, *Off-Site Parking Opportunities*) including Lots L and M that could be leased by the LBMMC for a period of five years or longer, and possible future construction of one or more parking structures when justified by total demand. City approvals to construct and operate Campus buildings will be contingent on LBMMC and MCH's ability to demonstrate the availability of long-term parking. All on-site parking would be developed in areas designated for interim or permanent use of parking in the Master Plan of Land Uses. This would include demolition of the 51 existing residential units to create surface parking (Lots Q, R, S, and T). If determined to be necessary, a multilevel parking structure capable of accommodating several hundred spaces per level would be sited in an area designated for long-term parking. Development of the parking structure within Parking Lot K as an easterly expansion of the existing parking structure has been identified as a feasible location, and was used as the basis for the environmental analysis in this EIR. Surface parking areas and structures would be landscaped. However, the LBMMC would apply for a code exception to the City of Long Beach landscaping requirements to allow for planting of significantly less than the one 24-inch tree per four spaces normally required. All parking facilities constructed by the LBMMC would incorporate best management practices consistent with the requirements of the Regional Water Quality Control Board.

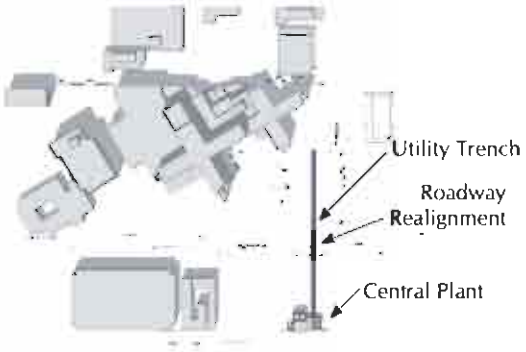
2.4.8 Construction Scenario

Construction would be scheduled in compliance with City of Long Beach regulations, and would commence at 7:00 a.m. and cease no later than 8:00 p.m. on weekdays. Work would be conducted on Saturdays, and would commence at 7:00 a.m. and cease no later than 5:00 p.m. The information

Existing Condition



Roadway Realignment



Final Configuration

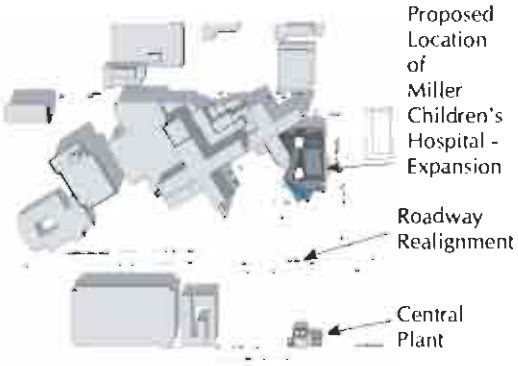
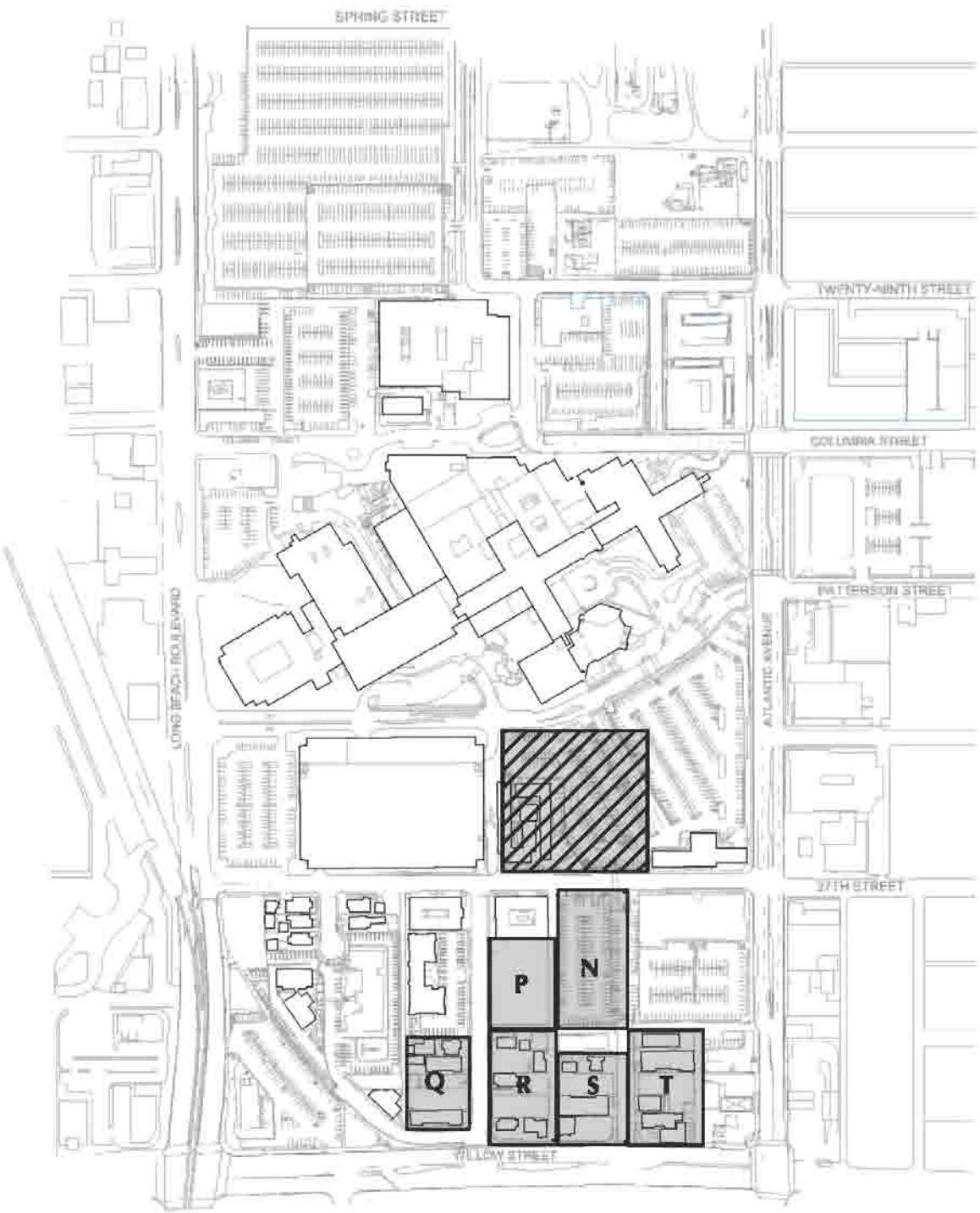


FIGURE 2.4.6-1
Central Plant, Utility Trench, and Roadway Realignment



LEGEND

- Proposed On-Site Surface Parking
- Proposed On-Site Parking Structure
- N Patient/Visitor
- O Staff/Doctor/Visitor/Patient
- P Patient/Visitor
- Q Patient/Visitor
- R Patient/Visitor
- S Patient/Visitor
- T Patient/Visitor

N

Not to Scale

FIGURE 2.4.7-1
On-Site Parking Opportunities

LEGEND

- Proposed Off-Site Leased Parking
- L Patient/Visitor
- M Patient/Visitor

N

Not to Scale

FIGURE 2.4.7-2
Off-Site Parking Opportunities

contained in the construction scenarios for reasonably anticipated proposed project elements was developed from empirical data for construction of comparable projects and was used in the assessment of potential construction impacts to air quality, ambient noise levels, and traffic and circulation.

The construction scenario for the proposed project is envisioned as a 10-step process to be completed in eight years between 2005 and 2013, where construction of certain elements is contingent on the availability of funding. The sequence of the construction scenario has been developed based on the most aggressive scenario to allow consideration of a reasonable worst-case scenario (Figures 2.4.8-1A through 2.4.8-1J, *Construction Scenarios, Steps 1 through 10*).

2.4.8.1 Master Plan of Land Uses

The proposed Master Plan of Land Uses provides a conceptual framework for the reorganization of the pattern of land uses within the Campus. Construction, operation, and maintenance of new Campus elements that are reasonably foreseeable are evaluated at the project level of detail in this Draft EIR. Development of other future elements, consistent with the land use designations provided in the Master Plan of Land Uses, would need to be evaluated by the City of Long Beach on a case-by-case basis to determine if the activity constitutes a project pursuant to CEQA. If future activities are determined to constitute a project, then the City of Long Beach would need to determine the appropriate level of environmental documentation to be prepared to support the decision-making process related to the proposed element. Revisions to the Master Plan of Land Uses would be subject to a discretionary decision by the City of Long Beach and the appropriate related level of environmental review pursuant to CEQA.

2.4.8.2 Todd Cancer Institute

The 125,930-gross-square-foot TCI building would be constructed in two phases. Phase I of the TCI consists of the construction of 83,630 gross square feet. Construction of Phase I would be anticipated to be initiated in July 2005 and completed by December 2007. Phase II consists of 45,500 gross square feet. Construction of Phase II would be undertaken on an as-needed basis that is anticipated to occur no sooner than year 2010. The estimated duration of construction for Phase II is 18 months. Construction staging would be accomplished within the build-out area of Phases I and II of the TCI and associated parking area (Figure 2.4.8-1A)

Phase I

A list of the type and quantity of equipment that would potentially be used in the construction of the TCI is provided in Table 2.4.8.2-1, *Anticipated Equipment for Construction of TCI Phase I*.

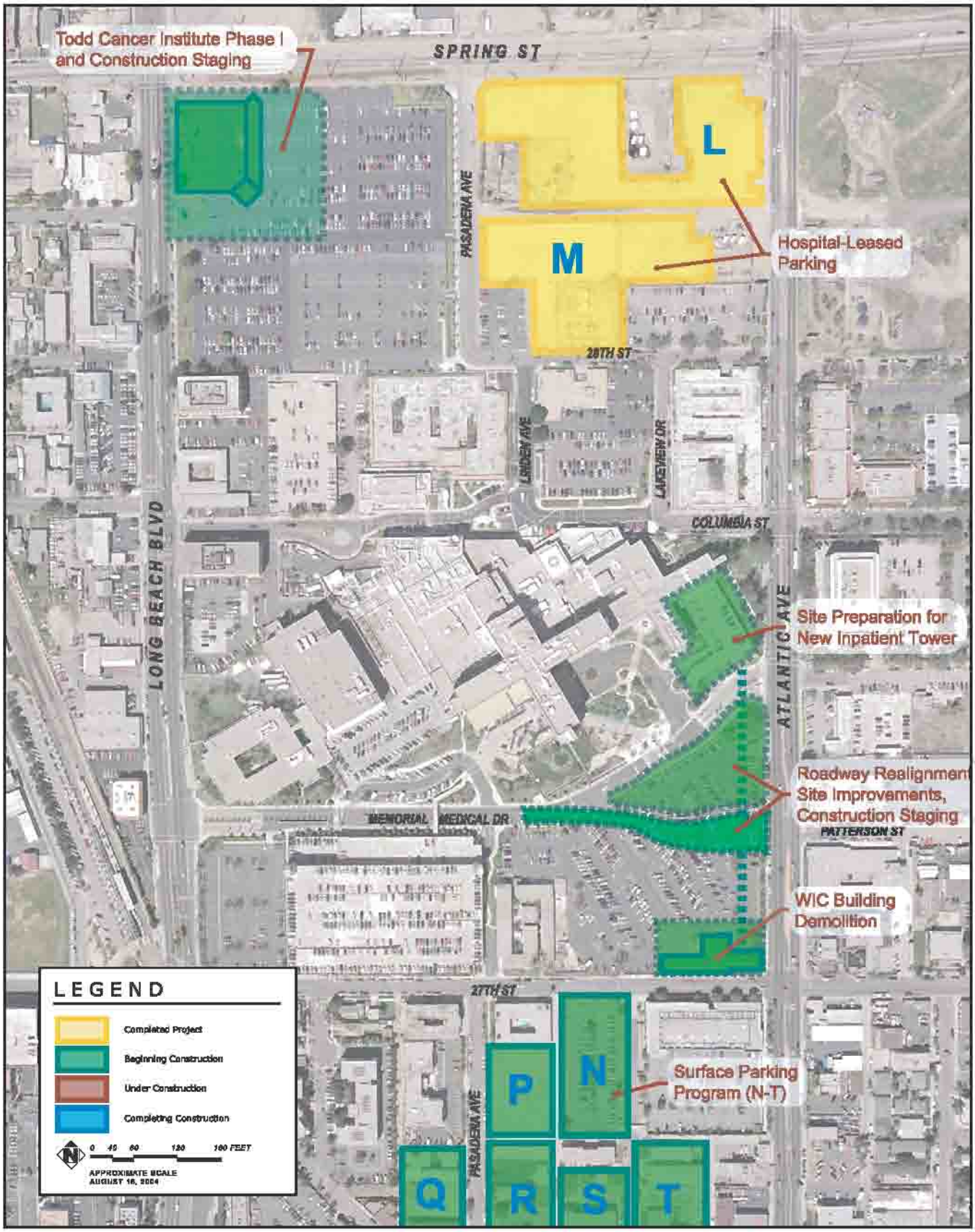


FIGURE 2.4.8-1A
Construction Scenario, Step 1, July 2005 to October 2005

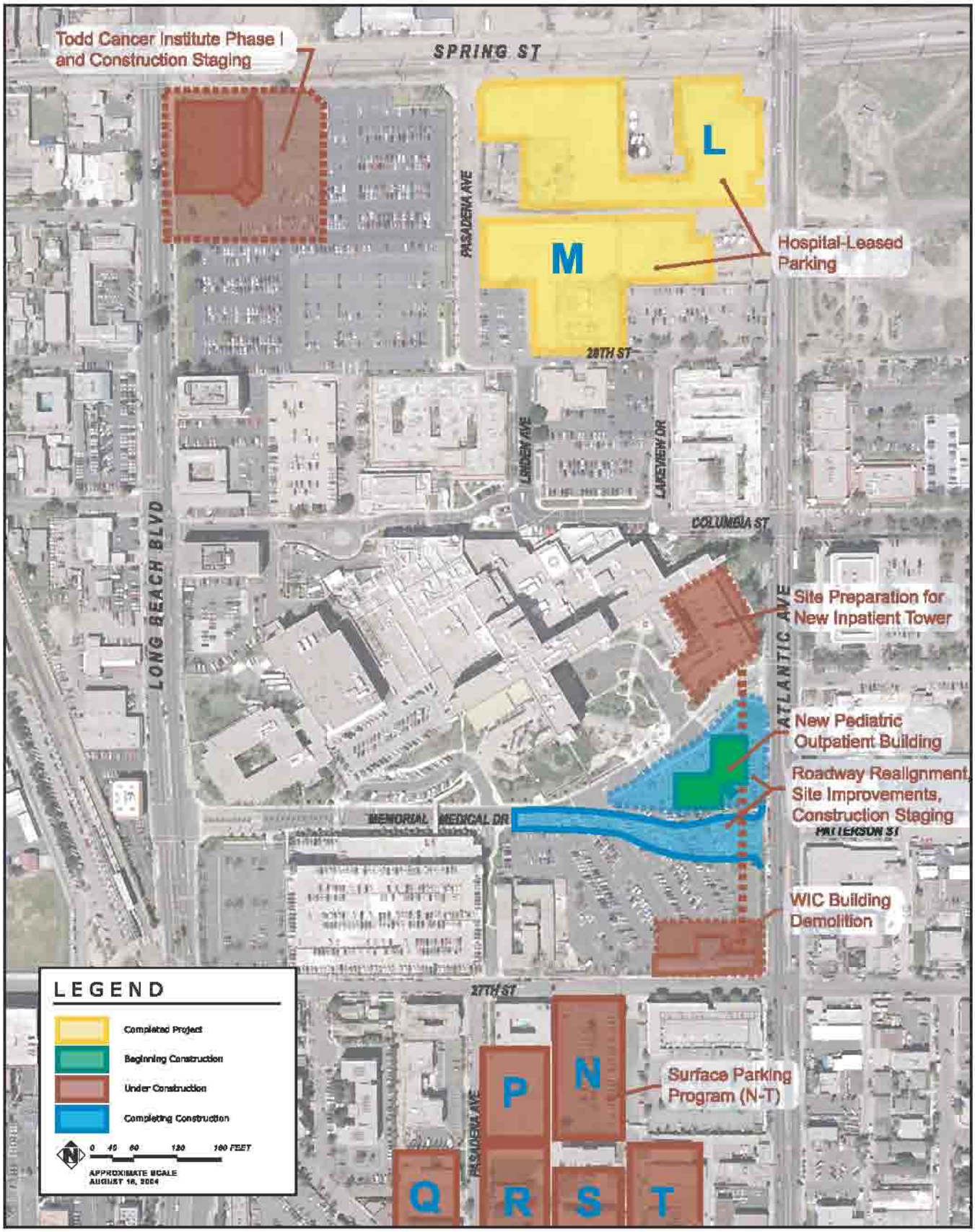


FIGURE 2.4.8-1B
Construction Scenario, Step 2, November 2005 to May 2006

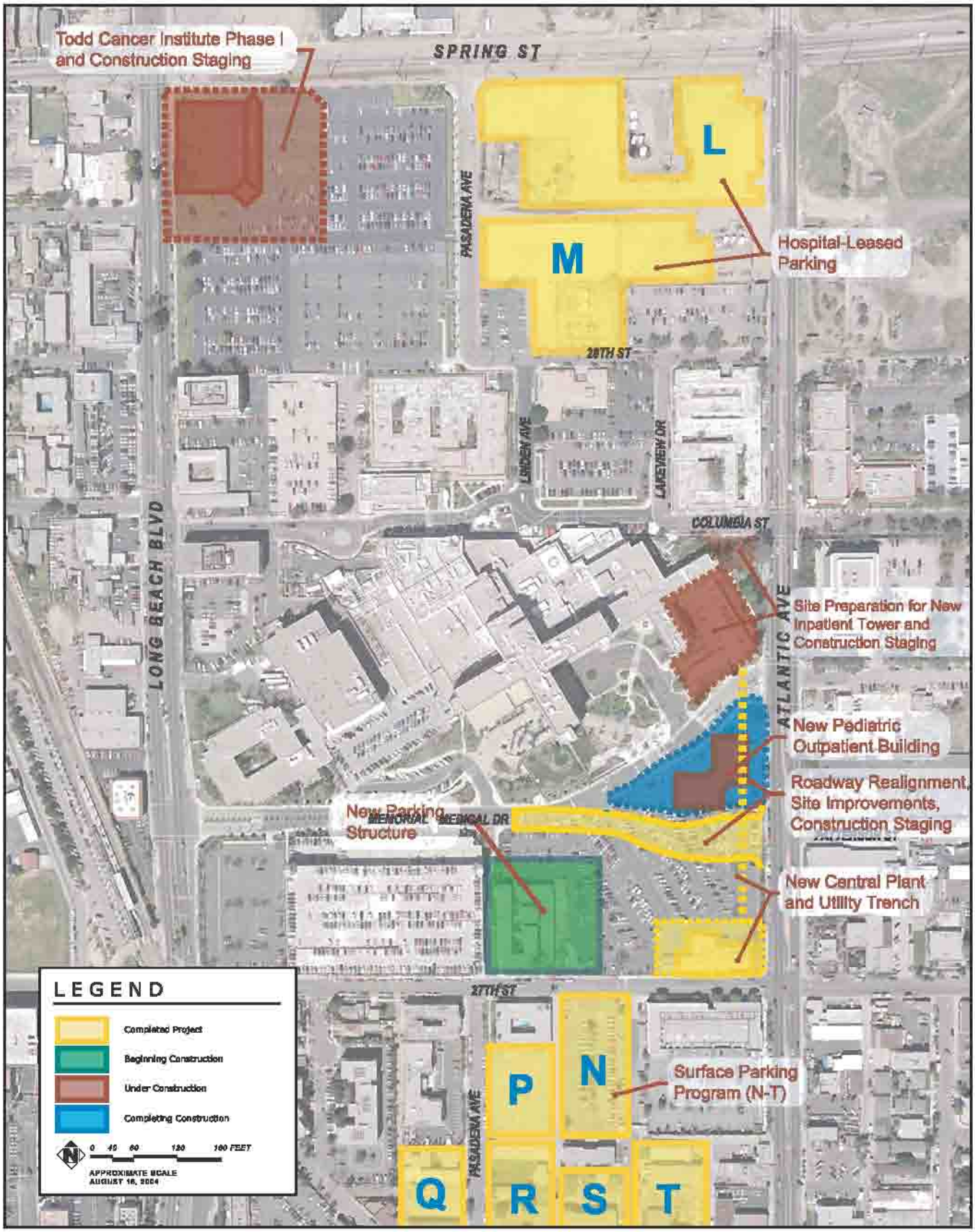


FIGURE 2.4.8-1C
Construction Scenario, Step 3, June 2006 to September 2006

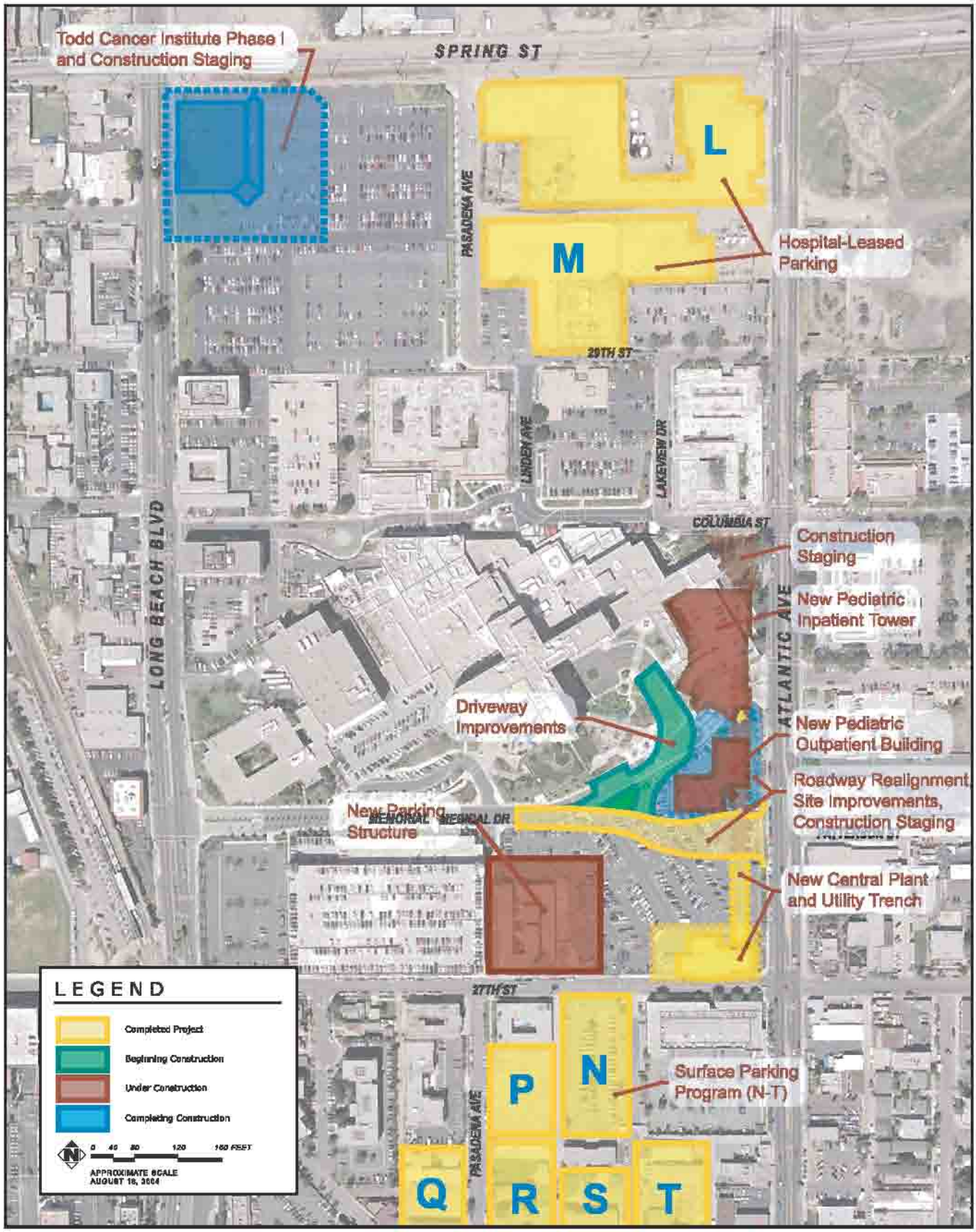


FIGURE 2.4.8-1D
Construction Scenario, Step 4, October 2006 to May 2007

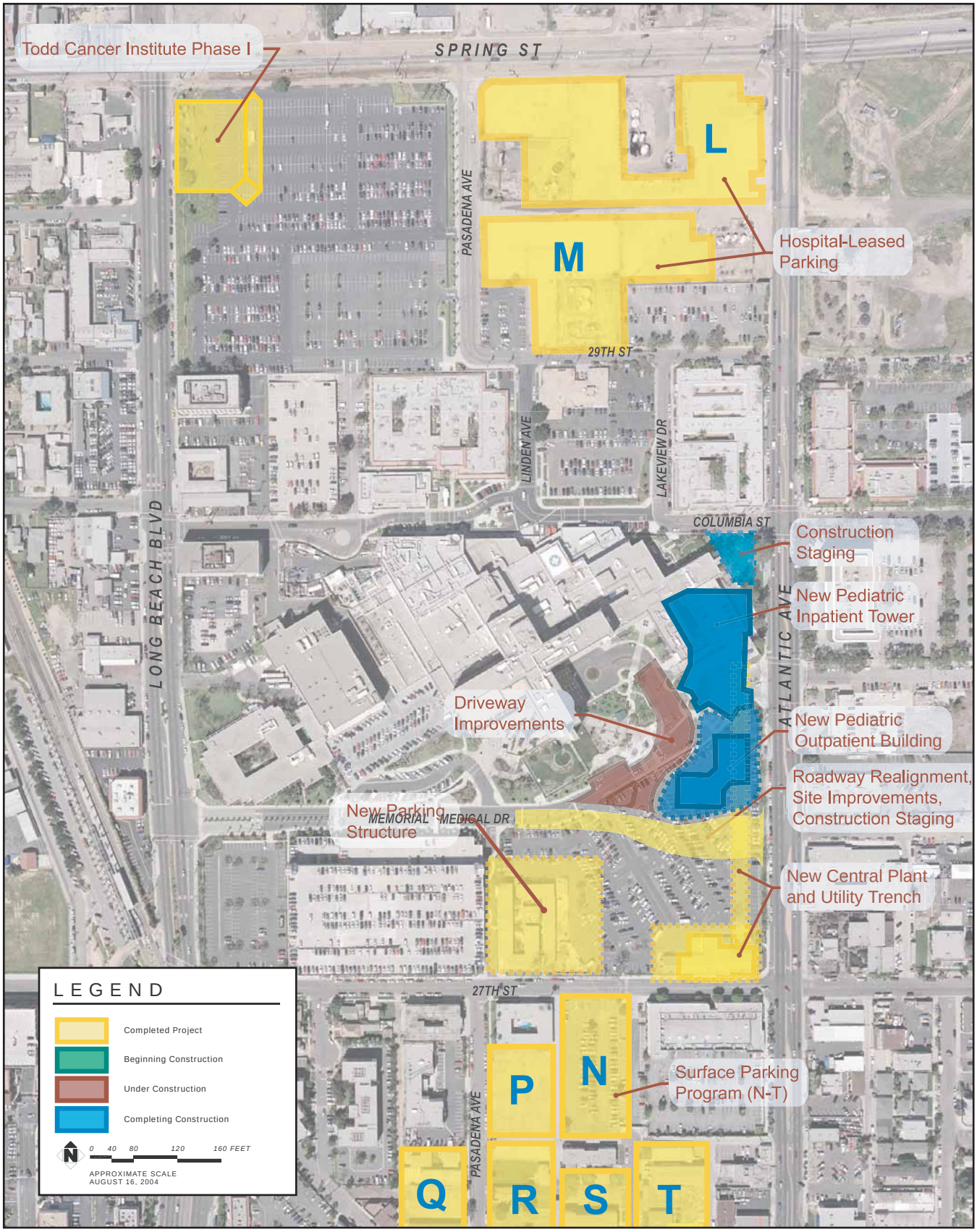


FIGURE 2.4.8-1E
Construction Scenario, Step 5, February 2008 to June 2010

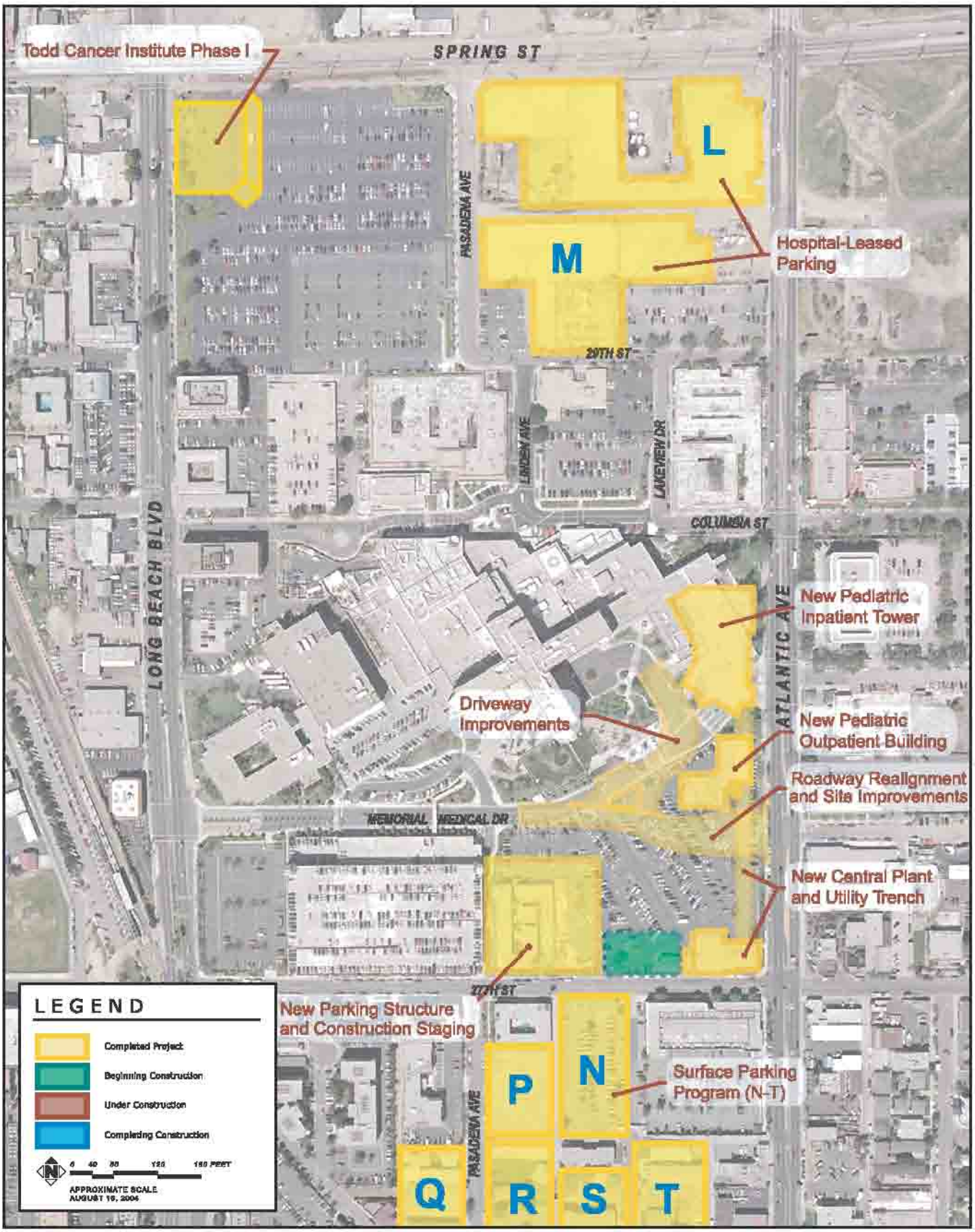


FIGURE 2.4.8-1F
Construction Scenario, Step 6, February 2008 to June 2010

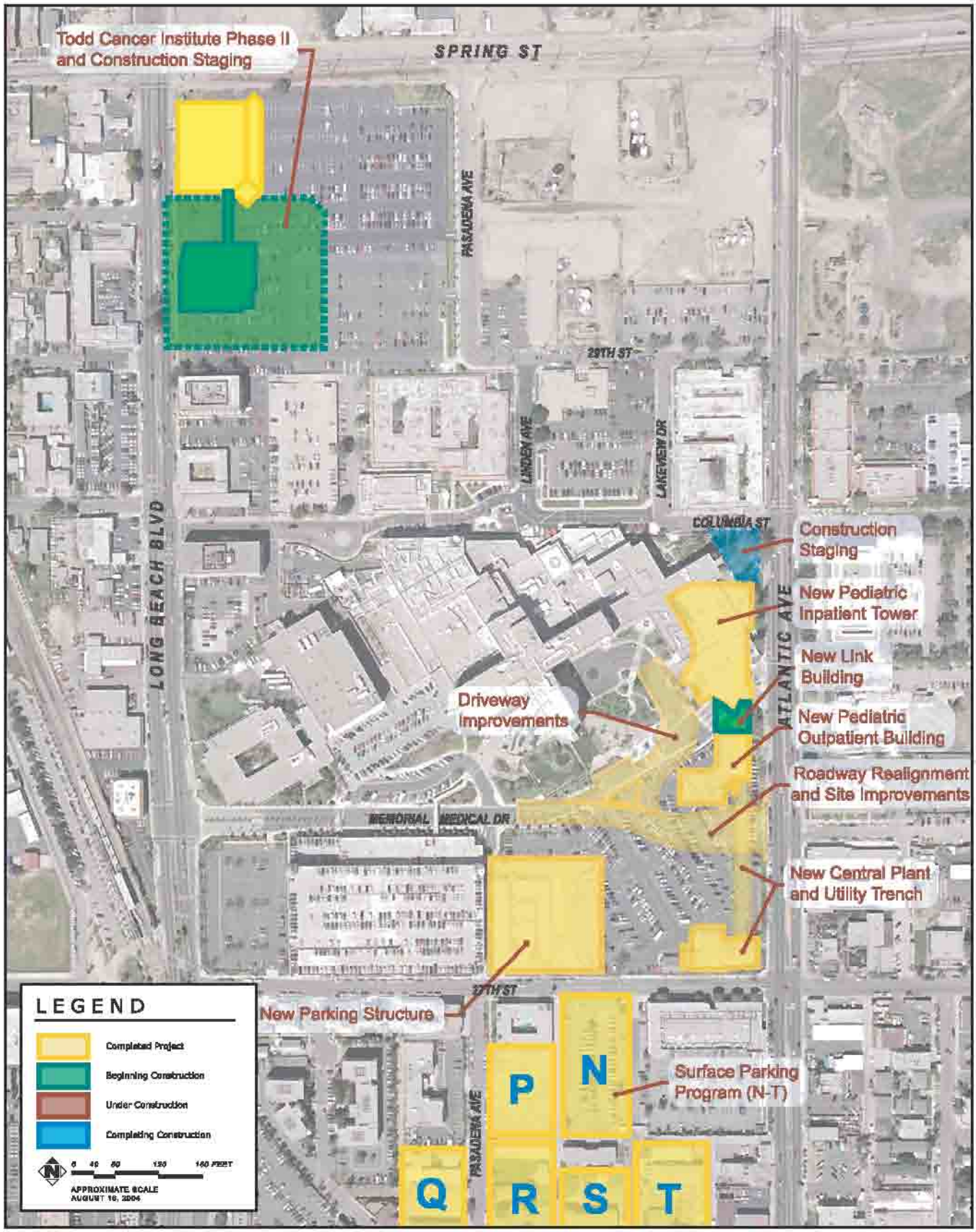


FIGURE 2.4.8-1G
Construction Scenario, Step 7, July 2010 to June 2011

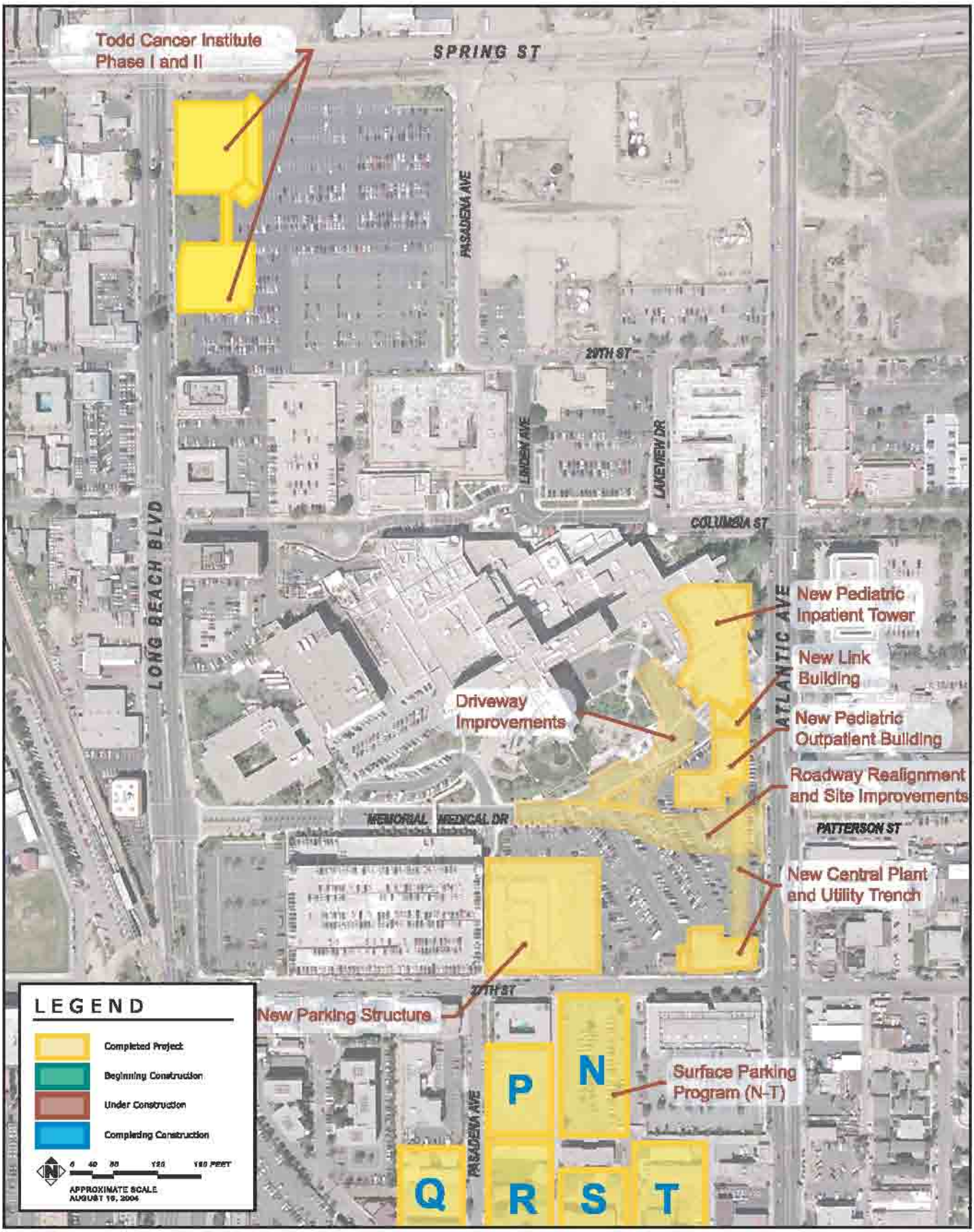


FIGURE 2.4.8-1H
Construction Scenario, Step 8, Completed by Decemeber 2011

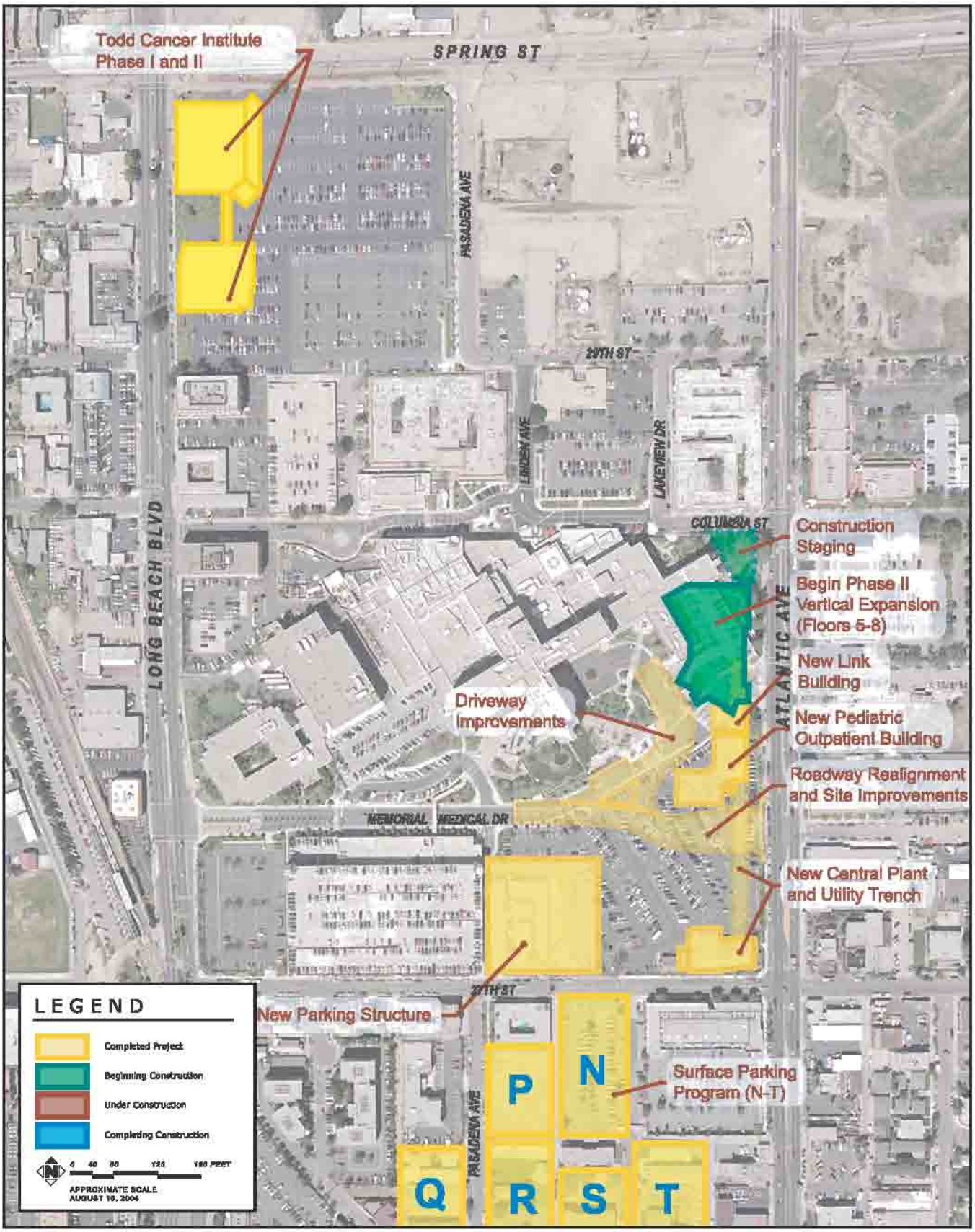


FIGURE 2.4.8-11
Construction Scenario, Step 9, January 2012 to June 2013

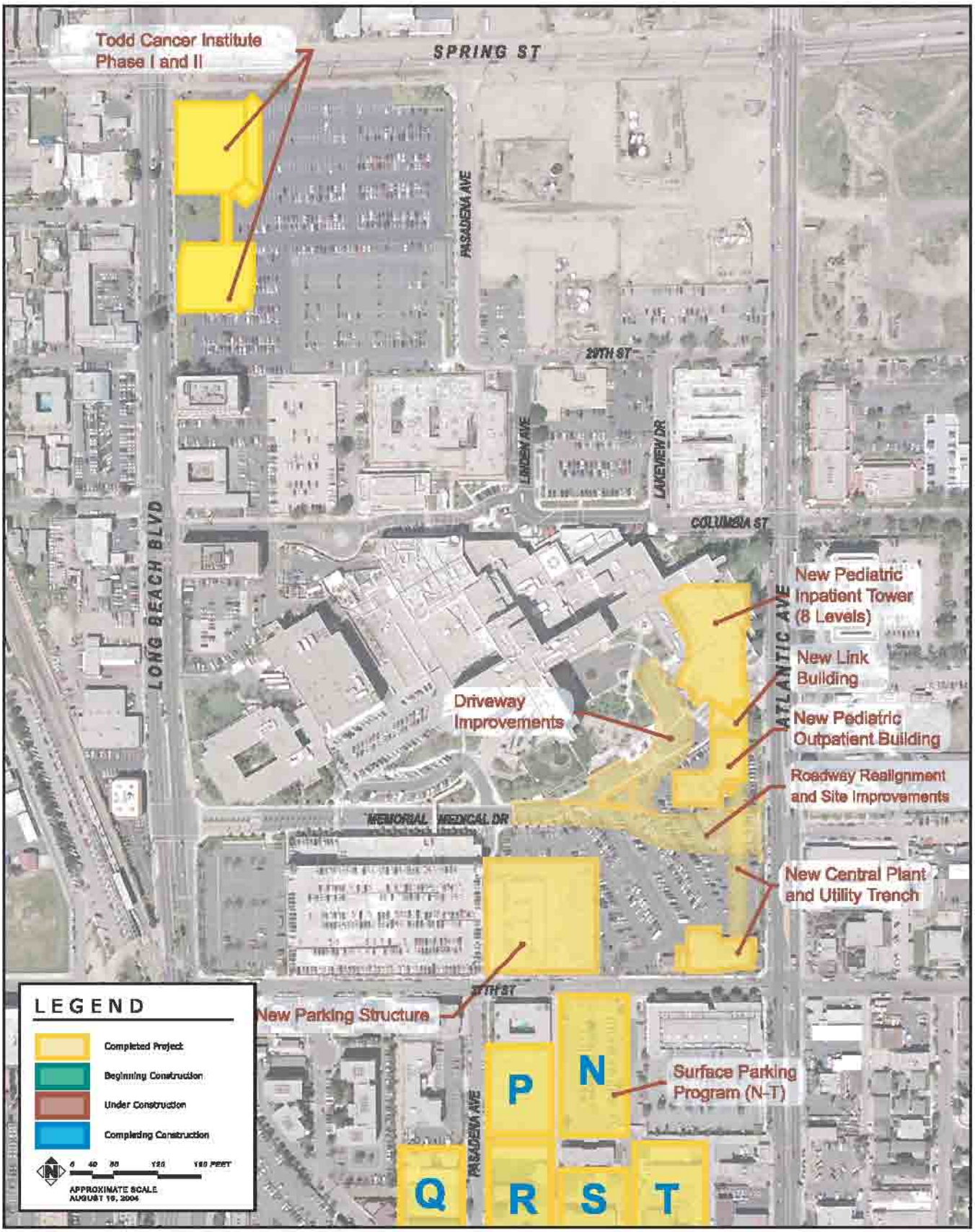


FIGURE 2.4.8-1J
Construction Scenario, Step 10, Completed by June 2013

TABLE 2.4.8.2-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF TCI PHASE I

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
2	Dozer	18 trips	12 weeks
1	Front-end loader	4 Trips	12 weeks
1	Water truck	20 trips	130 weeks
1	Grader	4 trips	12 weeks
60	Pick-up truck	39,000 trips	130 weeks
5	Dump truck	280 trips	12 weeks
3	Crane	3 trips	70 weeks
16	Concrete mix truck	500 trips	100 weeks
1	Roller	4 trips	7 weeks
15	Materials delivery	650 trips	130 weeks
3	Fork lift / grade all	10 trips	100 weeks

Construction of TCI Phase I would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; building construction; landscaping; and fencing. Approximately 90 workers would be expected to be on site during peak construction activity periods. Fewer than 90 workers would be expected to be on site during nonpeak construction activity periods.

Phase II

A list of the type and quantity of equipment that would potentially be used in the construction of the TCI is provided in Table 2.4.8.2-2, *Anticipated Equipment for Construction of TCI Phase II*.

TABLE 2.4.8.2-2
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF TCI PHASE II

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
2	Dozer	18 trips	7 weeks
1	Front-end loader	2 trips	7 weeks
1	Water truck	10 trips	72 weeks
1	Grader	2 trips	7 weeks
35	Pick-up truck	21,450 trips	72 weeks
3	Dump truck	155 trips	10 weeks
3	Crane	3 trips	45 weeks
9	Concrete mix truck	250 trips	65 weeks
1	Roller	4 trips	7 weeks
8	Materials delivery	450 trips	72 weeks
2	Fork lift / grade all	6 trips	65 weeks

Construction of TCI Phase II would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 55 workers would be expected to be on site during peak construction activity periods. Fewer than 55 workers would be expected to be on site during nonpeak construction activity periods.

2.4.8.3 Miller Children's Hospital—Pediatric Inpatient Tower, Utility Trench, and Central Plant Building

The 198,000-gross-square-foot pediatric inpatient tower would be constructed in two phases. Phase I of the pediatric inpatient tower consists of the construction of 124,500 gross square feet. Construction of Phase I would be anticipated to be initiated in July 2005 and completed by December 2007. Phase II consists of 73,500 gross square feet. Construction of Phase II would be undertaken on an as-needed basis that is anticipated to occur no sooner than year 2012. The estimated duration of construction for Phase II is two years. The pediatric inpatient tower requires construction of a central plant building. The central plant building would be constructed concurrently with Phase I of the pediatric inpatient tower. The central plant building would be constructed with sufficient capacity to support the anticipated ultimate build-out of pediatric inpatient services. The central plant building would also provide redundant support to other inpatient services on the Campus. The link building and the pediatric outpatient building would be constructed with their own utility connections and would function independently of the hospital buildings. The central plant building would consist of a single-level structure of approximately 3,000 gross square feet, approximately 5,000 gross square feet of open yard, plus eight parking stalls. The pediatric inpatient tower would be served by the central plant building via a 1,000-linear-foot underground utility trench along the eastern edge of the Campus, parallel to Atlantic Avenue, which would be constructed concurrently with the pediatric inpatient tower.

Phase I Pediatric Inpatient Tower

Construction of Phase I of the pediatric inpatient tower would be anticipated to be initiated in July 2005 and completed by December 2007. A list of the type and quantity of equipment that would potentially be used in construction of Phase I of the pediatric inpatient tower is provided in Table 2.4.8.3-1, *Anticipated Equipment for Construction of Pediatric Inpatient Tower Phase I*.

TABLE 2.4.8.3-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION
OF PEDIATRIC INPATIENT TOWER PHASE I

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
3	Dozer	15 trips	19 weeks
2	Drill rig	4 trips	16 weeks
1	Man lift	2 trips	80 weeks
2	Front-end loader	8 trips	20 weeks
1	Water truck	20 trips	80 weeks
2	Grader	4 trips	19 weeks
96	Pick-up truck	50,400 trips	105 weeks
8	Dump truck	450 trips	19 weeks
3	Crane	3 trips	80 weeks
26	Concrete mix truck	1,200 trips	80 weeks
1	Roller	4 trips	15 weeks
24	Materials delivery	600 trips	105 weeks
5	Fork lifts / grade all	10 trips	90 weeks

Construction of Phase I of the pediatric inpatient tower would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; building construction; landscaping; and fencing. Approximately 144 workers would be expected to be on site during peak construction activity periods. Fewer than 140 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished with the parking area of Phase I of the pediatric inpatient tower (Figure 2.4.8-1C).

Phase II Pediatric Inpatient Tower

A list of the type and quantity of equipment that would potentially be used in construction of Phase II of the pediatric inpatient tower is provided in Table 2.4.8.3-2, *Anticipated Equipment for Construction of Pediatric Inpatient Tower Phase II*.

TABLE 2.4.8.3-2
ANTICIPATED EQUIPMENT FOR CONSTRUCTION
OF PEDIATRIC INPATIENT TOWER PHASE II

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
1	Dozer	2 trips	6 weeks
1	Man Lift	2 trips	80 weeks
1	Water truck	2 trips	6 weeks
56	Pick-up truck	34,320 trips	104 weeks
1	Dump truck	40 trips	11 weeks
2	Crane	4 trips	80 weeks
15	Concrete mix truck	745 trips	100 weeks
1	Roller	2 trips	6 weeks
13	Materials delivery	550 trips	104 weeks
3	Fork lift / grade all	10 trips	80 weeks

Construction of Phase II of the pediatric inpatient tower would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 85 workers would be expected to be on site during peak construction activity periods. Fewer than 85 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking and the build-out area of Phase II of the pediatric inpatient tower (Figure 2.4.8-1I).

Utility Trench

Construction of Phase I would be anticipated to be initiated in August 2006 and completed by March 2007. A list of the type and quantity of equipment that would potentially be used in construction of the central plant building to support Phase II of the pediatric inpatient tower is provided in Table 2.4.8.3-3, *Anticipated Equipment for Construction of Utility Trench*.

TABLE 2.4.8.3-3
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF UTILITY TRENCH

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
1	Dozer	1 trips	20 weeks
1	Front-end loader	2 trips	20 weeks
1	Water truck	2 trips	34 weeks
1	Grader	1 trips	4 weeks
6	Pick-up truck	1,080 trips	34 weeks
2	Dump truck	200 trips	12 weeks
1	Crane	1 trips	12 weeks
2	Concrete mix truck	180 trips	34 weeks
1	Roller	1 trips	4 weeks
1	Materials delivery	120 trips	34 weeks

Construction of the utility trench to support the MCH expansion would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 20 workers would be expected to be on site during peak construction activity periods. Fewer than 20 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished with the parking and build-out areas of MCH (Figure 2.4.8-1D).

Central Plant Building

Construction of the central plant building would be anticipated to be initiated in March 2007 and completed by December 2007. A list of the type and quantity of equipment that would potentially be used in construction of the central plant building to support Phase II of the pediatric inpatient tower is provided in Table 2.4.8.3-4, *Anticipated Equipment for Construction of Central Plant Building*.

TABLE 2.4.8.3-4
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF CENTRAL PLANT BUILDING

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
1	Dozer	1 trips	12 weeks
1	Water truck	2 trips	43 weeks
1	Grader	1 trips	12 weeks
25	Pick-up truck	5,000 trips	43 weeks
1	Dump truck	60 trips	12 weeks
1	Crane	1 trips	25 weeks
2	Concrete mix truck	360 trips	43 weeks
1	Roller	1 trips	4 weeks
1	Materials delivery	200 trips	43 weeks
1	Fork lift / grade all	2 trips	25 weeks

Construction of the central plant building to support the MCH expansion would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 50 workers would be expected to be on site during peak construction activity periods. Fewer than 50 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking area of MCH (Figure 2.4.8-1D).

2.4.8.4 Miller Children's Hospital—Pediatric Outpatient Building

The MCH pediatric outpatient building would provide approximately 80,000 gross square feet. The outpatient building would consist of a five-story, B-occupancy, medical office building housing an array of pediatric care clinics and support services. Construction of the outpatient building is contingent on the identification of funding, philanthropy, and lease agreements with private physician groups that would be anticipated to be constructed in an 18-month time period initiated for construction no sooner than January 2006.

A list of the type and quantity of equipment that would potentially be used in the construction of Phase I of the pediatric outpatient building is provided in Table 2.4.8.4-1, *Anticipated Equipment for Construction of Pediatric Outpatient Building*.

TABLE 2.4.8.4-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION
OF PEDIATRIC OUTPATIENT BUILDING

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
3	Dozer	15 trips	22 weeks
1	Water truck	20 trips	50 weeks
2	Drill rig	4 trips	20 weeks
1	Man lift	2 trips	60 weeks
3	Front-end loaders	4 trips	22 weeks
2	Grader	4 trips	22 weeks
96	Pick-up truck	59,904 trips	78 weeks
8	Dump truck	450 trips	22 weeks
3	Crane	6 trips	50 weeks
26	Concrete mix truck	1,500 trips	78 weeks
1	Roller	4 trips	20 weeks
24	Materials delivery	500 trips	78 weeks
6	Fork lift / grade all	12 trips	60 weeks

Construction of the pediatric outpatient building would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; building construction; landscaping; and fencing. Approximately 144 workers would be expected to be on site during peak construction activity periods. Fewer than 140 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking area of MCH (Figure 2.4.8-1D).

2.4.8.5 Miller Children's Hospital—Link Building

A new, 20,000-gross-square-foot, mixed-use building connecting the pediatric inpatient tower and the pediatric outpatient building would be located southwest of the intersection of Atlantic Avenue and Patterson Street. Construction of the link building is contingent on the identification of a funding source, and the building would be anticipated to be constructed in a 12-month time period and initiated for construction no sooner than July 2010.

A list of the type and quantity of equipment that would potentially be used in the construction of the MCH link building is provided in Table 2.4.8.5-1, *Anticipated Equipment for Construction of MCH Link Building*.

TABLE 2.4.8.5-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF MCH LINK BUILDING

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
2	Dozer	4 trips	12 weeks
1	Front-end loader	2 trips	12 weeks
1	Water truck	2 trips	50 weeks
1	Grader	2 trips	12 weeks
35	Pick-up truck	21,450 trips	72 weeks
3	Dump truck	100 trips	12 weeks
3	Crane	3 trips	50 weeks
9	Concrete mix truck	465 trips	65 weeks
1	Roller	2 trips	7 weeks
8	Materials delivery	275 trips	72 weeks
2	Fork lift / grade all	4 trips	50 weeks

Construction of the MCH link building would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 55 workers would be expected to be on site during peak construction activity periods. Fewer than 55 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking areas of MCH (Figure 2.4.8-1G).

2.4.8.6 Roadway Realignment

Vehicular and pedestrian circulation patterns would be improved through the realignment of selected internal roadways and a signage and wayfinding program. Specifically, a 520-linear-foot section of the alignment of Patterson Street/Memorial Medical Center Drive as it extends through the Campus would be realigned southward by approximately 300 feet from its current intersection at Atlantic Avenue, near 28th Street on the east side of the Campus, to make a connection with the existing alignment of Patterson Street at Atlantic Avenue. As a result, the intersection of Atlantic Avenue and 28th Street would become a T-intersection. The roadway would consist of three site entry lanes and three site exit lanes, with an automated traffic control gate for each lane. The present roadway is approximately 85 feet wide at Atlantic Avenue. The roadway would narrow to 40 feet where it transitions to the existing

alignment of Patterson Street near Pasadena Avenue. The road curvature uses a radius of approximately 500 feet to transition from Patterson Street to the existing roadway alignment.

A list of the type and quantity of equipment that would potentially be used in the construction of the roadway realignment is provided in Table 2.4.8.6-1, *Anticipated Equipment for Construction of Roadway Realignment*.

TABLE 2.4.8.6-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF ROADWAY REALIGNMENT

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
2	Hydraulic excavator	4 trips	6 weeks
2	Water truck	8 trips	20 weeks
2	Grader	6 trips	9 weeks
8	Pick-up truck	4,160 trips	52 weeks
5	Dump truck	186 trips	20 weeks
2	Asphalt paver	6 trips	3 weeks
7	Concrete mix truck	8,910 trips	22 weeks
1	Roller	6 trips	9 weeks
3	Rubber tire loader	6 trips	12 weeks
6	Materials delivery	380 trips	22 weeks

Construction of the roadway realignment would require connection to existing utilities, sewer facilities, and storm water drain facilities; paving; and building construction. Approximately 50 workers would be expected to be on site during peak construction activity periods. Fewer than 50 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking areas of the MCH (Figures 2.4.8-1A, 2.4.8-1D, and 2.4.8-1E).

2.4.8.7 Parking Program

A phased parking program would be designed to accommodate up to 2,986 parking stalls in surface parking areas on property owned by LBMMC, which would include demolition of 51 residential units, nearby off-site surface parking areas that could be leased by LBMMC, and possible future construction of one or more parking structures when justified by total demand. If it is determined to be necessary, a multilevel parking structure capable of accommodating several hundred spaces per level would be sited in an area designated for long-term parking. There is sufficient area in Parking Lot K to accommodate a parking structure east of the existing parking structure. For each element of the proposed project, sufficient parking would be constructed to accommodate any existing parking spaces displaced by construction, and sufficient additional parking would also be constructed to accommodate the parking demand generated by the construction of the proposed project element.

A list of the type and quantity of equipment that would potentially be used in construction of the parking facilities is provided in Table 2.4.8.7-1, *Anticipated Equipment for Construction of Parking Facilities*.

TABLE 2.4.8.7-1
ANTICIPATED EQUIPMENT FOR CONSTRUCTION OF PARKING FACILTIES

Quantity (Approximate)	Type	Total Number of Trips to and from Site during Construction	Duration of On-Site Construction Activities
3	Hydraulic excavator	6 trips	9 weeks
3	Water truck	12 trips	20 weeks
3	Grader	6 trips	14 weeks
12	Pick-up truck	6,240 trips	78 weeks
8	Dump truck	278 trips	12 weeks
3	Asphalt paver	6 trips	5 weeks
11	Concrete mix truck	5,200 trips	33 weeks
5	Roller	10 trips	14 weeks
5	Rubber tire loader	10 trips	18 weeks
9	Materials delivery	400 trips	33 weeks

Construction of parking facilities would require connection to existing utilities, sewer facilities, and on-site storm water pollution prevention devices; paving; and possible construction of a parking structure. Approximately 75 workers would be expected to be on site during peak construction activity periods. Fewer than 75 workers would be expected to be on site during nonpeak construction activity periods. Construction staging would be accomplished within the parking area of the MCH (Figures 2.4.8-1A, 2.4.8-1B, and 2.4.8-1F).

2.5 INTENDED USES OF THE EIR

The City of Long Beach is the Lead Agency under CEQA. The Long Beach City Council will take final action on the proposed project. The Planning Commission will consider certification of the Final EIR prior to considering recommendations to the Long Beach City Council. It requires the following related discretionary approvals before the implementation of the proposed project:

- Long-Range Development Plan (Master Plan) Approval
- Site Plan Review
- Zoning District Change
- Standard Variances

Specific project elements may be subject to additional permits as described in Table 2.5-1, *Permit Requirements*.

TABLE 2.5-1
PERMIT REQUIREMENTS

Agency	Permits and Approvals	How to Obtain Permit
U.S. EPA	Asbestos and Lead-Based Paint Abatement	Application
Cal/OSHPD	Plan Approval	Application
Cal/OSHA	Demolition Permit	Application
Cal/OSHA	Asbestos Worker Notification	Application
California EPA, Department of Toxic Substances Control	Asbestos Abatement Notification	Application
California Department of Toxics Substance Control	Health Risk Assessment and Work Plan	Application
State Department of Oil and Gas Resources	Oil Well Abandonment Permits	Application
Regional Water Quality Control Board	NPDES Permit	Application
South Coast Air Quality Management District	Notification	Application
City of Long Beach	Demolition Permit	Application
City of Long Beach	SWPPP Drainage Permit	Application
City of Long Beach	Road Encroachment Permit	Application
City of Long Beach	Truck Haul Permit	Application
City of Long Beach	Grading Permit	Application
City of Long Beach	Building Permit	Application

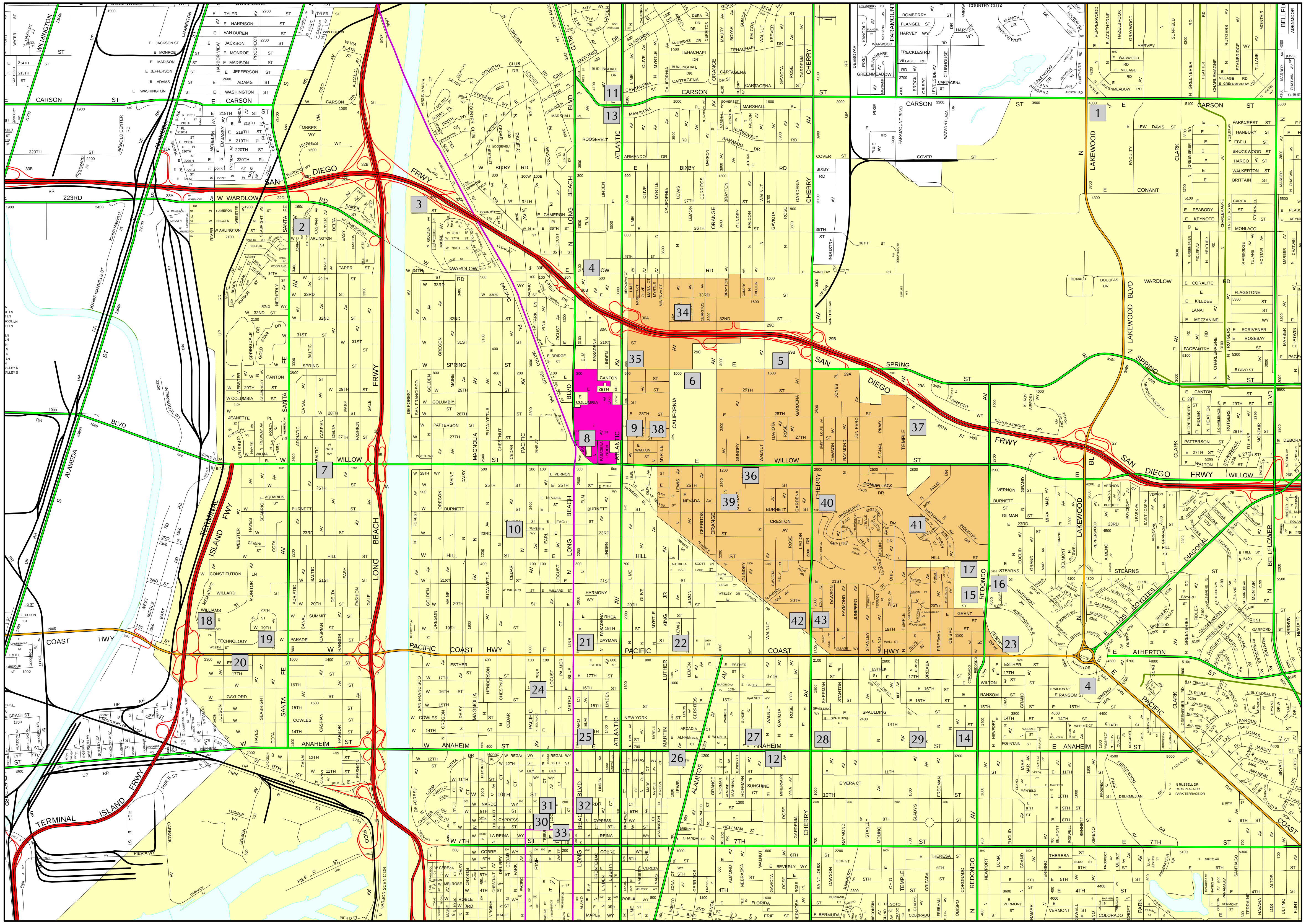
NOTES:
Cal/OSHA = California Division of Occupational Safety and Health
Cal/OSHPD = California Office of Statewide Health Planning and Development
EPA = Environmental Protection Agency
NPDES = National Pollutant Discharge Elimination System
SWPPP = Storm Water Pollution Prevention Plan

Permits and applications needed for specific environmental issues are presented throughout Section 3 of this Draft EIR.

2.6 RELATED PROJECTS

The area surrounding the Campus was examined to determine if there are any projects currently in progress or proposed for the future that could potentially add to the impacts of the proposed project, creating a cumulative significant impact.

Related projects that are anticipated within the next year and that lie within an approximate 1-mile radius of the proposed project site include those shown in Table 2.6-1, *List of Related Projects,* and Figure 2.6-1, *Location of Related Projects*.



1. Douglas Park Project
2. Windward Village Mobile Home Park
3. OOI Self Storage
4. Retail Center
5. Commercial/Industrial Complex
6. Long Beach Sports Park
7. Retail Center
8. Medical Office
9. Medical Office
10. Medical Office
11. North Long Beach Police Station
12. New Comm. Rehab. Industries Building
13. Medical Office
14. Walgreen's
15. Alamitos Ridge Residential
16. Alamitos Green Residential
17. Elementary School
18. Transitional Housing Facility
19. CSULB Technology Park
20. Warehouse
21. Affordable Condominiums
22. Commercial Building
23. Java Lanes Residential
24. Affordable Condominiums
25. Commercial Center
26. Commercial Building
27. Mark Twain Public Library
28. Commercial Building
29. Auto Zone
30. Lofts
31. Locust Avenue Residential
32. Commercial Building
33. Condominiums
34. U.S. Storage
35. Home Improvement/Retail
36. A and A Ready Mix
37. Sixth Building Industrial
38. Gundry Estates
39. Las Brisas Phase II (Low-Income Housing)
40. Hilltop Specific Plan
41. Hathaway Estates
42. LBUSD Middle School
43. Cherry St./19th Ave. Condominiums

0 0.5 1 Miles

N

Source: Thomas Brothers, LLG

LBMMC Campus City of Long Beach City of Signal Hill

FIGURE 2.6-1

Location of Related Projects

TABLE 2.6-1
LIST OF RELATED PROJECTS

No.	Cumulative Project	Location	Description
City of Long Beach			
1.	Douglass Park Project (Case # 0404-13)	3855 North Lakewood Boulevard	349-lot subdivision, 1,400 DU, 400-room hotel, 3,300,000-SF commercial, and general light industrial 11-acre parkland
2.	Windward Village Mobile Home Park (Case # 0308-19)	3595 Santa Fe Avenue	Subdivide the existing Windward Village Mobile Home Park
3.	OOI Self Storage (Case # 0110-07)	712 West Baker Street	519,135-SF self-storage
4.	Retail Center (Case # 0104-19)	3400 Long Beach Boulevard	7,000-SF retail and 1,500-SF fast-food restaurant
5.	Commercial/Industrial Complex (Case # 0308-02)	1825 East Spring Street	101,000-SF industrial
6.	Long Beach Sports Park (Case # 0211-03)	1000 East Spring Street	Youth golf center, 30,000-SF office building, athletic fields and courts, batting cages, and 23,000-SF skate park
7.	Retail Center (Case # 0208-04)	1422 West Willow Street	5,750-SF retail
8.	Medical Office (Case # 0102-02)	2702 Long Beach Boulevard	105,800-SF medical office building
9.	Medical Office (Case # 0208-15)	2760 Atlantic Avenue	7,200-SF medical office building
10.	Medical Office (Case # 0301-18)	2299 Pacific Avenue	2,000-SF medical office building
11.	North Long Beach Police Station (Case # 0012-14)	4891 Atlantic Avenue	20,000-SF police station
12.	New Comm. Rehab. Industries Building (Case # 0306-10)	1546 Anaheim Street	6,000-SF industrial building
13.	Medical Office (Case # 0405-21)	3932 Long Beach Boulevard	7,000-SF medical office building
14.	Walgreen's (Case # 0302-24)	3339 East Anaheim Street	11,656-SF drug store/pharmacy
15.	Alamitos Ridge Residential (Case # 9809-02)*	2080 Obispo Avenue	106 single-family detached
16.	Alamitos Green Residential*	East of Redondo Avenue, between Stearns Street and Hathaway Avenue	15 single-family detached
17.	Elementary School*	South of Hill Street, between Redondo Avenue and Obispo Avenue	1,450 students
18.	Transitional Housing Facility (Case # 0206-12)	2001 River Avenue	201-room transitional housing facility
19.	Cal State University, Long Beach Technology Park (Case # 9811-05 and 0003-19)	2000 West 19th Street	200,000-SF industrial and 200,000-SF research and development

TABLE 2.6-1
LIST OF RELATED PROJECTS, Continued

No.	Cumulative Project	Location	Description
City of Long Beach (continued)			
20.	Warehouse (Case # 0301-08)	2200 West Pacific Coast Highway	22,653-SF warehouse
21.	Affordable Condominiums (Case # 0304-06)	1856 Long Beach Boulevard	60 condominiums
22.	Commercial Building (Case # 0307-19)	1075 East Pacific Coast Highway	10,400-SF commercial building
23.	Java Lanes Residential (Case # 0306-02)	3738–3800 East Pacific Coast Highway	79 condominiums
24.	Affordable Condominiums (Case # 0301-16)	1593–1643 Pacific Avenue	43 condominiums
25.	Commercial Center (Case # 0207-17)	325 East Anaheim Street	6,700-SF commercial center
26.	Commercial Building (Case # 0210-19)	100–108 East Anaheim Street	4,000-SF commercial building
27.	Mark Twain Public Library (Case # 0207-22)	1401 East Anaheim Street	16,000-SF public library
28.	Commercial Building (Case # 0304-31 and 0310-06)	2215 East Anaheim Street	11,300-SF commercial building
29.	Auto Zone (Case # 0401-27)	2923–2933 East Anaheim Street	5,400-SF auto parts store
30.	Lofts (Case # 0105-10)	829 Pine Avenue	Convert existing commercial building to 16 lofts
31.	Locust Avenue Residential (Case # 0110-05)	835 Locust Avenue	82 condominiums/townhouses
32.	Commercial Building (Case # 0402-11)	940 Long Beach Boulevard	5,000-SF commercial building
33.	Condominiums (Case # 0405-18)	838 Pine Avenue	Convert 83 apartments to 83 condominiums/townhouses
City of Signal Hill**			
34.	U.S. Storage	Northeast corner of California Avenue and 32nd Street	130,000-SF self-storage facility
35.	Home Improvement/Retail	North of Spring Street, between Atlantic Avenue and California Avenue	138,708-SF home improvement, 23,700-SF garden center, 56,890-SF retail, 6,000-SF restaurant, and two 2,500-SF fast-food restaurants
36.	A and A Ready Mix	Northwest Corner of 27th Street and California Avenue	25 truck cement ready mix plant
37.	Sixth Building Industrial	2700 Temple Avenue	60,000-SF industrial
38.	Gundry Estates	Southeast Corner of Willow Street and Gundry Avenue	11 DU single-family detached
39.	Las Brisas Phase II (Low-Income Housing)	Northeast Corner of California Avenue and Burnett Street	60 apartments

TABLE 2.6-1
LIST OF RELATED PROJECTS, Continued

No.	Cumulative Project	Location	Description
City of Signal Hill (continued)**			
40.	Hilltop Specific Plan	Skyline Drive, east of Cherry Avenue	100 single-family detached, 194 multi-family attached
41.	Hathaway Estates	Southwest Corner of Temple Avenue and Hathaway Avenue	20 single-family detached
42.	Long Beach Unified School District Middle School	West of Cherry Avenue, south of 20th Street	850 student middle school
43.	Cherry Avenue / 19th Street Condominiums	East of Cherry, between 19th Street and 20th Street	30 DU condominiums

NOTES:
DU = Dwelling unit
SF = Square foot
* Based on Traffic Impact Study for Alamitos Ridge prepared by LLG Pasadena, December 9, 2002.
** Based on conversation with Gary Jones, City of Signal Hill, September 24, 2004.
SOURCE: City of Long Beach. 30 June 2004. "Major Projects List." Contact: 333 West Ocean Boulevard, Long Beach, CA 90802.

2.7 PROJECT ALTERNATIVES

As a result of the project formulation process, the City of Long Beach explored two alternatives to the proposed project to assess their ability to meet most of the proposed project objectives. The Technical Advisory Committee met on August 11, 2004, to review this proposed project, which resulted in three alternatives, including the No Project Alternative required under CEQA, being carried forward for detailed analysis in this Draft EIR. The alternatives included the following:

- No Project Alternative
- Alternative A, consisting of a delayed start for the TCI until adequate on-site or off-site parking can be secured
- Alternative B, consisting of expedited commitment to construct an on-site parking structure with a 1,700-car capacity

These alternatives are describes and analyzed in Section 4.0 of this Draft EIR.

SECTION 3.0
EXISTING CONDITIONS, IMPACTS, MITIGATION, AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

This section of the Environmental Impact Report (EIR) evaluates the potential of the proposed Long Beach Memorial Medical Center Expansion (proposed project) to result in significant impacts to the environment as a result of construction, operation, and maintenance of the proposed project. This section of the EIR provides a full scope of environmental analysis in conformance with the State of California Environmental Quality Act (CEQA) Guidelines.

The Initial Study for the proposed project[1] determined that there was no evidence that the proposed project would cause significant environmental effects related to five environmental resources: agricultural resources, biological resources, mineral resources, population and housing, and recreation. The Initial Study identified the potential for the proposed project to result in significant impacts to 12 environmental resources warranting further analysis: aesthetics, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, National Pollution Discharge Elimination System, noise, public service, traffic and transportation, and utilities and service systems. As a result of the detailed evaluation contained in this EIR, it has been determined that the proposed project would not result in potential significant impacts to land use and planning. The potential significant impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, National Pollution Discharge Elimination System, noise, public service, traffic and transportation, and utilities and service systems would be avoided or reduced to below a level of significance except for air quality and traffic and transportation.

Each section describes the regulatory framework, existing conditions, thresholds of significance, impact analysis, mitigation measures for significant impacts, and level of significance after mitigation. The applicable federal, state, regional, county, and local statutes and regulations that govern individual environmental resources that must be considered by the City of Long Beach Planning Commission and the City Council in the decision-making process are included in the regulatory framework described for each environmental resource. The existing conditions portion of the analysis has been prepared in accordance with the State CEQA Guidelines and includes a description of the environment in the vicinity of the proposed project as it currently exists, from both a local and regional perspective. The existing conditions are described based on literature review and archived resources, agency coordination, and field inspections. Significance thresholds were established in accordance with Appendix G of the State CEQA Guidelines. The potential for cumulative impacts was considered in relation to 43 related projects identified as a result of scoping, agency consulting, and site inspections. Mitigation measures were derived from public and agency input and state-of-the-practice engineering methods. The level of significance after mitigation was evaluated in accordance with the thresholds of significance and the effectiveness of the proposed mitigations to reduce potentially significant impacts to below the significance threshold. The impact analysis contained in this environmental document is based solely on the implementation of the proposed project as described in Section 2, Project Description.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

SECTION 3.0
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Each section describes the regulatory framework, existing conditions, thresholds of significance, impact analysis, mitigation measures for significant impacts, and level of significance after mitigation. The applicable federal, state, regional, county, and local statutes and regulations that govern individual environmental resources that must be considered by the City of Long Beach Planning Commission and the City Council in the decision-making process are included in the regulatory framework described for each environmental resource. The existing conditions portion of the analysis has been prepared in accordance with the State CEQA Guidelines and includes a description of the environment in the vicinity of the proposed project as it currently exists, from both a local and regional perspective. The existing conditions are described based on literature review and archived resources, agency coordination, and field inspections. Significance thresholds were established in accordance with Appendix G of the State CEQA Guidelines. The potential for cumulative impacts was considered in relation to 43 related projects identified as a result of scoping, agency consulting, and site inspections. Mitigation measures were derived from public and agency input and state-of-the-practice engineering methods. The level of significance after mitigation was evaluated in accordance with the thresholds of significance and the effectiveness of the proposed mitigations to reduce potentially significant impacts to below the significance threshold. The impact analysis contained in this environmental document is based solely on the implementation of the proposed project as described in Section 2, Project Description.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

3.1 AESTHETICS

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to aesthetics. Therefore, this issue is carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to aesthetics and to identify potential alternatives.

The analysis of aesthetics includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Aesthetics at the proposed project site has been analyzed in accordance with the methodologies provided by the Land Use element,[2] Open Space and Recreation element,[3] and Conservation element[4] of the City of Long Beach General Plan, and the characterization of aesthetic resources as contained in the California Department of Transportation (Caltrans) designation of scenic highways.[5]

3.1.1 Regulatory Framework

State

California Scenic Highway Program

California's Scenic Highway Program preserves and protects scenic highway corridors from changes that would diminish their aesthetic value. Caltrans designates scenic highway corridors. The nearest eligible state-designated scenic highways and routes to the proposed project site are U.S. Interstate 405 (I-405), U.S. Interstate 710 (I-710), and State Route 1 (SR-1).

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach, Department of Planning and Building. October 2002. *Open Space and Recreation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[4] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[5] California Department of Transportation. March 1996. *Guidelines for the Official Designation of Scenic Highways*. Contact: California Department of Transportation, Division of Procurement and Contracts, 1727 30th Street, Fourth Floor, MS-67, Sacramento, CA 95816. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/shpg1.htm

Local

City of Long Beach General Plan

The proposed project would be under the jurisdiction of the City of Long Beach General Plan. The Land Use element of the General Plan includes the goal of facilities maintenance, which states that "Long Beach will maintain its physical facilities and public right-of-ways at a high level of functional and aesthetic quality."[6] An important component of the Land Use element is the Urban Design Analysis, which examines how the City is structured and the context in which the built environment is seen and understood. The Conclusions and Policy Directions for the Urban Design Analysis offer policy directions for the relationship of building heights to surrounding topography, aesthetic streetscape considerations for the local roadway system, and enhancement of important activity centers. Clustering of different building heights rather than a continuous corridor of tall buildings is recommended along Long Beach Boulevard to emphasize centers over corridors. Building setbacks, landscaping, limited curb cuts, and better building designs are recommended to improved streetscapes along arterials such as Long Beach Boulevard, Willow Street, and Atlantic Avenue. A multipurpose activity center is recommended for the area along Atlantic Avenue and Long Beach Boulevard south of the I-405 freeway, which includes the Memorial Hospital Medical Center Activity Node and acknowledges the beginnings of such a node at the time of the last Land Use element update.[7]

The Open Space and Recreation element[8] of the General Plan recognizes the need to reserve and create more community gardens. Program 2.2 of the Open Space and Recreation element directs the City to work with nonprofit groups to examine the feasibility of expanding open space for community gardens.

The Scenic Routes element of the General Plan[9] serves as a comprehensive plan for the development and protection of a system of scenic routes and corridors. The nearest identified scenic asset to the proposed project site is the Signal Hill view corridor. The only designated scenic routes in the City of Long Beach are Ocean Boulevard from the Los Angeles River to Livingston Drive, Livingston Drive between Ocean Boulevard and 2nd Street, and 2nd Street between Livingston Street and Pacific Coast Highway.

The Conservation element[10] of the General Plan includes the goal "to identify and preserve sites of outstanding scenic, historic, and cultural significance or recreational potential."

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[6] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802. (Page 18).

[7] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802. (Page 36–45.)

[8] City of Long Beach, Department of Planning and Building. October 2002. *Open Space and Recreation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[9] City of Long Beach, Department of Planning and Building. May 1975. *Scenic Routes Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[10] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

3.1.2 Existing Conditions

Scenic Vistas

The proposed project is not within the viewshed of a California State Scenic Byway designated by the Caltrans Office of State Landscape Architecture or an All-American or National Scenic Byway as designated by the U.S. Department of Transportation, Federal Highway Administration.[11] The proposed project site is not located near a scenic coastal or waterway views because it is greater than 3 miles north of the Long Beach Harbor. There is a residential neighborhood at a higher elevation north of the proposed project site.

State-Designated Scenic Highways

There is no state-designated highway in the vicinity of the proposed project site (Figure 3.1.2-1, *Scenic Highways and Routes*). Although portions of the Pacific Coast Highway are designated as a California State Scenic Highway, the segment of the highway that runs east to west less than 1 mile to the south of the proposed project site is not subject to the California State Scenic Highway designation. The nearest eligible California State Scenic Highway is a section of SR-1 (Pacific Coast Highway), located approximately 3 miles southeast of the Long Beach Memorial Medical Center campus (Campus).

Visual Character

The 54-acre Campus includes approximately 1,213,945 gross square feet of inpatient and outpatient medical facilities, supported by utilities, parking, and circulation. (Section 2, Project Description, Figure 2.2-1, *Existing Conditions*, and Figure 2.2-2, *Site Photographs*).

The existing visual character of the Campus is defined by the conditioned structures that support inpatient, outpatient, and appurtenant services, additional residential properties, vacant lots, landscaping, and signs.

Conditioned Structures

The primary functions of the Campus are housed in nine conditioned structures constructed over several decades (Figure 3.1.2-2, *Existing Conditions: Structures*). The nine conditioned structures are briefly described below:

1. Miller Children's Hospital—The Miller Children's Hospital (MCH), built in 1969, is a 175,000-square-foot, four-story structure.

2. Long Beach Memorial Medical Center—The Long Beach Memorial Medical Center (LBMMC), built in 1960 as a six-story building, had two stories added in 1970.

3. Administration Building—The Administration Building, built between 1959 and 1963, is a 130,000-square-foot structure.

[11] U.S. Department of Transportation, Federal Highway Administration. 29 June 2004. National Scenic Byways Program. Contact: National Scenic Byways Program, HEPN-50, Room 3232, 400 Seventh Street, SW Washington, DC, 20590. Available at: http://www.byways.org/browse/states/CA/travel.html

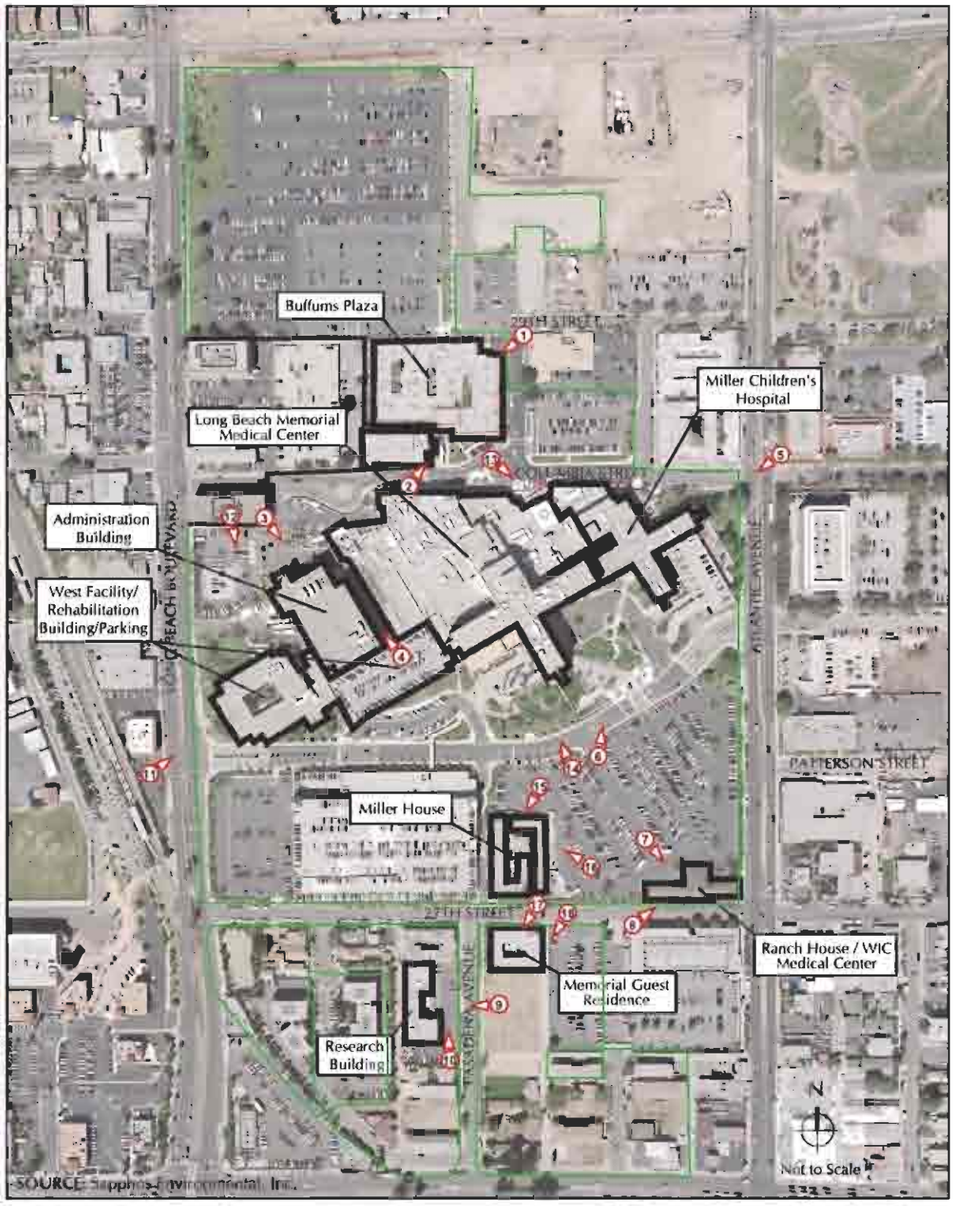
Freeway
Ramp/Interchange
Highway
Primary Road
Primary Ramp/Interchange
Railroad
Rapid Transit
Rapid Transit with other roads

0 0.5 1 2 Miles

Data Source: Thomas Brothers, Caltrans

Locally Designated Scenic Route
Eligible State Scenic Highways - Not Officially Designated
City of Long Beach
City of Signal Hill
LBMMC Campus

FIGURE 3.1.2-1
Scenic Highways and Routes



LEGEND

- LBMMC Boundary
- Buildings Controlled by LBMMC
- Photo Points

BUFFUMS PLAZA

1

2

ADMINISTRATION BUILDING

3

4

MILLER CHILDREN'S HOSPITAL

5

6

RANCH HOUSE / WIC MEDICAL CENTER

7

8

RESEARCH BUILDING

9

10

WEST FACILITY/ REHABILITATION BUILDING/PARKING

11

12

LONG BEACH MEMORIAL MEDICAL CENTER

13

14

MILLER HOUSE

15

16

MEMORIAL GUEST RESIDENCE

17

18

FIGURE 3.1.2-2
Existing Conditions: Structures

4. Memorial West Facility (Rehab)—The Memorial West Facility, built in 1965, is a 77,000-square-foot, two-story structure. The Rehabilitation Building, built in 1965, is a 31,000-square-foot, one-story building at the lower level of the hospital, with doctor parking above.

5. Miller House—The Miller House, built in 1960, is a 25,000-square-foot structure.

6. Ranch House/WIC Medical Center—The Ranch House/WIC Medical Center Building, built in 1963, is a 12,000-square-foot structure.

7. Memorial Guest Residence Hotel—The Memorial Guest Residence Hotel, built in 1962, is a 12,000-square-foot structure.

8. Research Building—The Research Building, built in 1991, is a 20,000-square-foot structure.

9. Buffums Plaza—The Buffums Plaza, built in 1968, is a 35,000-square-foot structure.

The nine conditioned structures within the Campus listed above provide a wide variety of inpatient, outpatient, and appurtenant health care services. The buildings where health care services are provided were constructed between 1956 and 1985; modifications to some buildings were undertaken in the 1990s. The visual character of the Campus is dominated by the eight-story main tower of the LBMMC (built in 1960 and modified in 1970) and the four-story MCH built in 1969, which are characteristic of the architecture of public buildings constructed in the Kennedy-Johnson-Nixon-Ford years.[12] The LBMMC and the MCH are set back from the two nearest primary arterials, Long Beach Boulevard and Atlantic Avenue. This is a practice that was common for the time period and a departure from earlier periods when public buildings were often aligned with the primary street and the primary facade faced the primary street. The strong geometric lines, glass, and exterior sheathing of the buildings are also characteristic of public buildings constructed during this time period.

There is a wide variety in massing within the Campus buildings, from the eight-story, 697,630-square-foot LBMCC to the one-story, 122,000-square-foot Ranch House/WIC Medical Center. The massing of the buildings is largely related to the diversity of services provide, equipment requirements, and capacity to serve. The inpatient facilities vary in height from two to eight stories. Outpatient facilities are typically one to two stories. Public building entrances are readily identifiable from parking areas and linkages to adjacent streets.

There are a wide variety of exterior building finishes; however, the primary exterior finishes are poured concrete, stucco, metal, and glass. Most of the exterior facades are painted in light, earth-toned facades with low potential for glare. All health care buildings are equipped with exterior lighting.

In addition to the nine conditioned structures listed above, there are 14 residential properties (72 residential units) within the Campus on properties owned by LBMMC that were constructed at various times between 1909 and 1959. None of the buildings on the Campus have been identified as significant architectural features in the City of Long Beach.[13] There are 13 additional office buildings

[12] Carole Rifkind. 1998. *A Field Guide to Contemporary American Architecture*. New York, NY: Penguin Group.

[13] David Gebhard and Robert Winter. 1994. *Los Angeles: An Architectural Guide*. Salt Lake City, UT: Gibb Smith Publisher.

and a motel located immediately adjacent to the Campus that further contribute to the existing urbanized visual character of the Campus.

Landscape

In the mid-1990s, LBMMC, at the request of the City of Long Beach, undertook substantial improvements to landscape treatment of the Campus along Long Beach Boulevard (Figure 3.1.2-3, *Existing Conditions: Landscape*). Campus landscaping plays an essential role in creating a positive impression with the public and in unifying the disparate functions on the Campus. Mature trees, pleasant vistas, and the creative use of surface materials minimize stress for not only patients but also visitors and staff.

The existing streetscape and Campus edge along Long Beach Boulevard and Atlantic Avenue currently consist of a white, wrought-iron fencing setback with low-lying plants or grass and trees in the foreground, especially around visitor and staff parking areas. Generous landscaping is provided on the Campus along public street frontages. Typical trees consist of palm, pepper, and eucalyptus along with various types of shrubs. Currently, plantings are maintained to provide a level of transparency at eye level that allows viewing from adjacent areas around or on the Campus. The character of 27th Street has an intimate, pedestrian scale and a commercial presence.

Signs

As part of the 1999 Master Plan, LBMMC improved wayfinding throughout the Campus through installation of signs, including entry monuments, directional signs, and monumentation of key buildings (Figure 3.1.2-4, *Existing Conditions: Signs*). However, the existing signage currently does not use a consistent exterior signage system that provides aid in navigation and direct patients, visitors, and staff to their destination.

Light and Glare

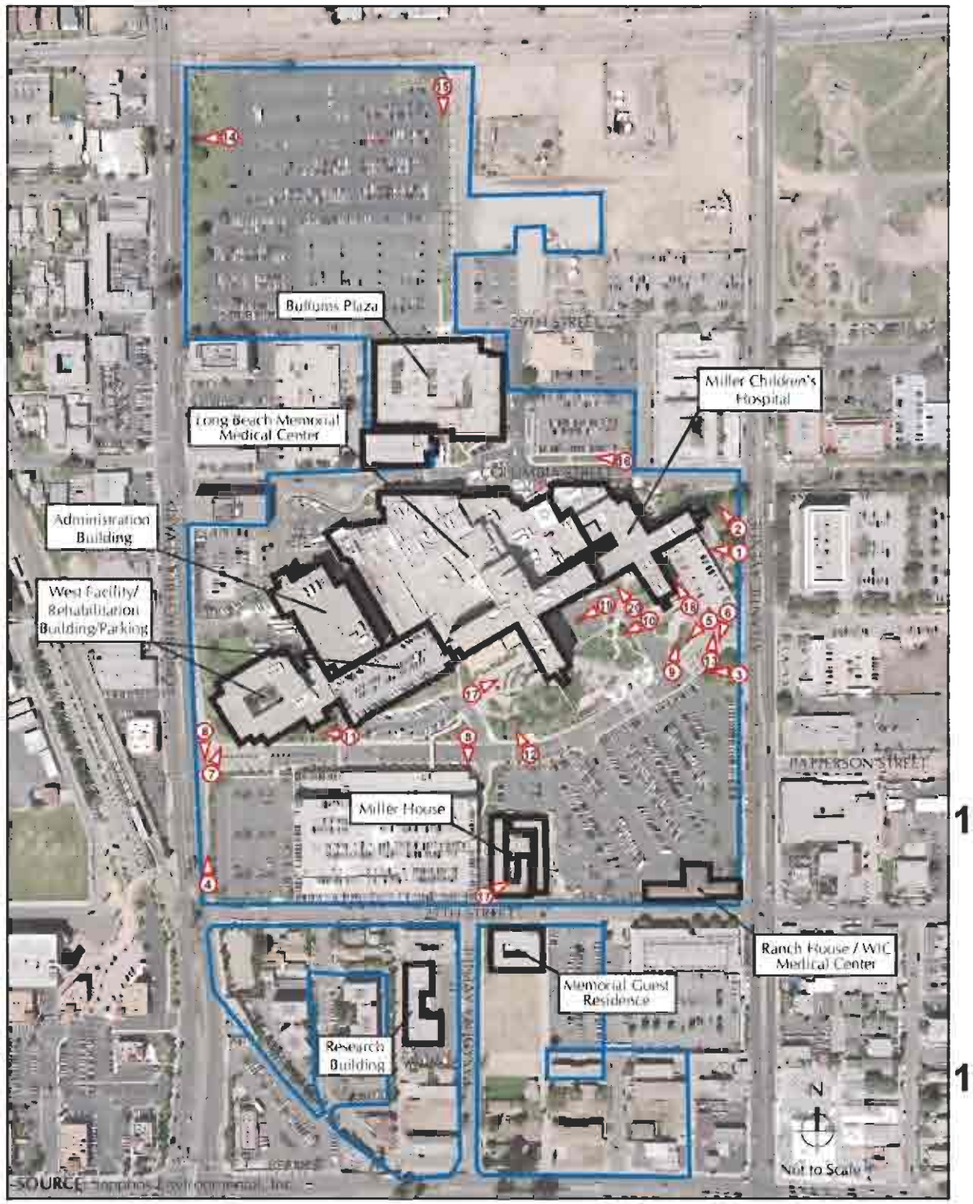
Existing sources of light and glare in the proposed project area are residential lighting in the surrounding neighborhoods; light and glare sources from existing buildings; light sources from the existing parking structures and lots; street lighting at intersections; and vehicular traffic along East Spring Street to the north, Atlantic Avenue to the east, Willow Street to the south, and Long Beach Boulevard to the west.

3.1.3 Significance Threshold

The potential for the proposed project to result in impacts to aesthetics was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

The proposed project would normally be considered to have a significant impact to aesthetics when the potential for any one of the following four thresholds occurs:

- Results in a substantial adverse effect on a scenic vista
- Substantially damages scenic resources including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway



EXTERIOR BOUNDARY OF THE CAMPUS


1


2


3


4

PRIMARY ENTRIES


5


6


7


8

INTERIOR SIDEWALK EDGE TREATMENTS


9


10


11


12

PARKING LOT EDGE TREATMENTS


13


14


15


16

BUILDING FACADES AND COURTYARDS

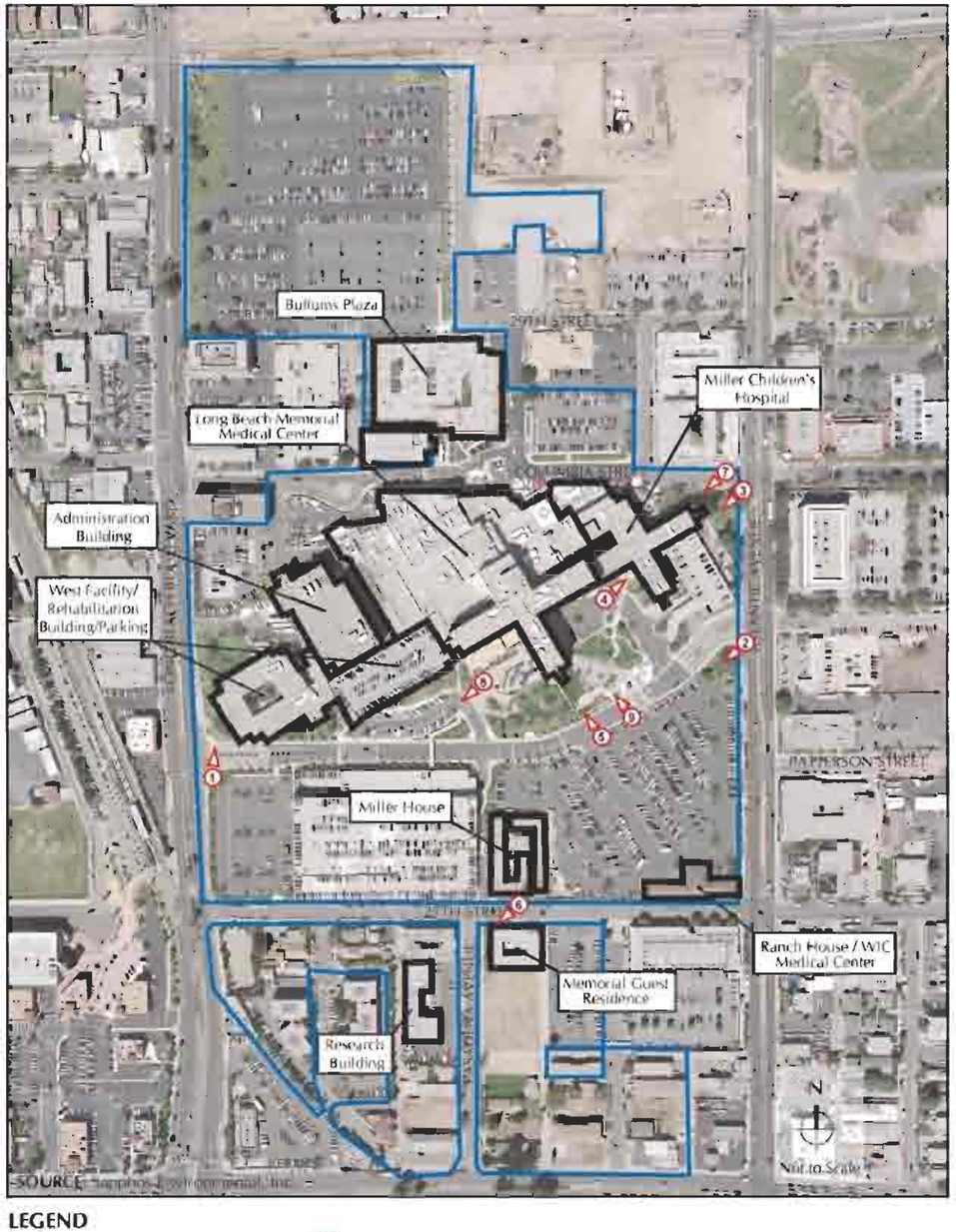

17


18


19


20

FIGURE 3.1.2-3
Existing Conditions: Landscape



GATEWAY SIGNS

1

2

3

BUILDING SIGNS

4

5

6

DIRECTIONAL SIGNS

7

8

9

FIGURE 3.1.2-4
Existing Conditions: Signs

- Substantially degrades the existing visual character or quality of the proposed project site and its surroundings

- Creates a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

3.1.4 Impact Analysis

Scenic Vistas

Direct and Indirect Impacts

Implementation of the proposed project would not be expected to have a substantial adverse effect on scenic vistas. The proposed project would not take place within, or be visible from, the viewshed of a California State Scenic Byway designated by the Caltrans Office of State Landscape Architecture or an All-American or National Scenic Byway as designated by the U.S. Department of Transportation, Federal Highway Administration.[14] The new structural development would take place within the existing Campus, with structures of similar height and scale, and in an urbanized area with compatible development. The proposed project would not be expected to obstruct scenic coastal or waterway views because it is greater than 3 miles north of the Long Beach Harbor. There is a residential neighborhood at a higher elevation north of the proposed project site, and the proposed project would not substantially change any scenic view of the coast to the south.

Because the proposed project would be implemented in a blighted, physically degraded[15] area designated by the City of Long Beach as the Central Long Beach Redevelopment Area, the proposed project's impacts are anticipated to contribute as a relative aesthetic improvement. Physical development of the proposed project is expected to minimally impact the aesthetics of the residential and commercial fabric of the immediately surrounding neighborhood during proposed project demolition and construction activities; however, these effects would be limited to properties already owned and occupied by the LBMMC. The proposed project would be aesthetically consistent with land use recommendations for mixed-use commercial development in both City of Long Beach[16] and City of Signal Hill[17] General Plans.

One City of Long Beach open space amenity exists adjacent to the proposed project site, the approximately 6-acre Veterans Memorial Park (Figure 2.1-2, *Long Beach Memorial Medical Center Location*). The proposed project would not be expected to degrade scenic vistas to, or from, the park as the intended land uses are consistent with those planned for the area in the City of Long Beach's

[14] U.S. Department of Transportation, Federal Highway Administration. 29 June 2004. National Scenic Byways Program. Contact: National Scenic Byways Program, HEPN-50, Room 3232, 400 Seventh Street, SW Washington, DC, 20590. Available at: http://www.byways.org/browse/states/CA/travel.html

[15] City of Long Beach, Redevelopment Agency. December 2000. *Report to the City Council for the Proposed Re-Adoption of the Central Long Beach Redevelopment Project*. Prepared by: Keyser Marston Associates, Inc., 500 South Grand Avenue, Suite 1480, Los Angeles, CA 90017. Contact: City of Long Beach, 333 West Ocean Boulevard, 3rd Floor, Long Beach, CA 90802.

[16] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[17] City of Signal Hill, Community Development Department. 3 July 2001. *Land Use Element of the Signal Hill General Plan*. Contact: City of Signal Hill, Community Development Department, 2175 Cherry Avenue, Signal Hill, CA 90755. Available at: http://www.signal-hill.ca.us/community_development/general_plan.php

General Plan land use designations.[18,19] Moreover, the conceptual plan for the proposed project does not call for the removal of any open space amenity, but includes open space development of a healing garden for cancer patients, which is consistent with the City of Long Beach's Open Space and Recreation element (Program 2.2) of the General Plan, as well as those of the County of Los Angeles and the Southern California Association of Governments ("providing open space for public health and safety").[20]

State-Designated Scenic Highways

Direct and Indirect Impacts

The implementation of the proposed project would not be expected to have a significant impact on scenic resources within a state-designated scenic highway. There is no state-designated highway in the vicinity of the proposed project site (Figure 3.1.2-1). Although portions of the Pacific Coast Highway are designated as a California State Scenic Highway, the segment of the highway that runs east to west less than 1 mile to the south of the proposed project site is not subject to the scenic highway designation. Nevertheless, views of the proposed project area from the Pacific Coast Highway would not be expected to be significantly altered by the proposed project because the street-level and skyline intrusion of the planned new construction is consistent with the existing visual character of the community.

Visual Character

Direct and Indirect Impacts

The construction phase of the proposed project would have a temporary impact on the existing visual quality of the site and its surroundings due to the physical upheaval caused by soil disturbance, waste debris generation, and security barriers required of the construction activities. However, it is anticipated that the potential impacts and short-term nature of the degradation of the visual character of the neighborhood are less than significant and would be outweighed by the long-term visual enhancement to be derived from the completed project and its provision of visually attractive structural and landscape amenities.

Landscaping would be provided along Long Beach Boulevard, Spring Street, Atlantic Avenue, and 27th Street frontages consistent with City of Long Beach requirements. Landscaping within the Campus area would be consistent with existing Campus landscaping. A healing garden would be developed adjacent to the Todd Cancer Institute (on the northwestern corner of the Campus, southeast of the intersection of Long Beach Boulevard and Spring Street, adjacent to the proposed building). Amenities and plant selections would be sensitive to the needs of cancer patients and would accentuate the healing and medicinal properties of certain plants. The development of the City of Long Beach–

[18] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan Open Space and Recreation Element.* Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[19] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[20] City of Long Beach, Department of Planning and Building. October 2002. *Open Space and Recreation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

approved landscaping plan would ensure that the proposed project contribute to the visual quality of its surroundings.

Light and Glare

Direct Impacts

The additional security lighting that would be required for the build-out of TCI Phases I and II; MCH pediatric inpatient tower Phases I and II, link building, and outpatient building; central plant building; roadway realignment; and surface parking areas, parking structure, and building signs; as well as the lighting of entry monuments would have the potential to contribute substantial sources of new light in the vicinity of the Campus. Careful selection of exterior building materials and window glass treatments, along with appropriate street and parking lot lamp shading, would likely serve to mitigate these potential impacts to a less than significant level. LBMMC currently has a security lighting program on file with the City of Long Beach Police Department. Existing lighting treatments used by LBMMC have been effective in directing light to areas that require lighting for security, while minimizing excess light to the maximum extent practicable.

The addition of three buildings and the central plant would have the potential to result in a new substantial source of glare from the materials used to finish the exterior facades of the new buildings. The existing buildings are finished in materials that produce an acceptable level of glare. Incorporation of minimally reflective surfaces would reduce reflected glare to below the level of significance. The ability to avoid the creation of new substantial sources of glare requires the consideration of mitigation measures.

3.1.5 Cumulative Impacts

The potential for cumulative impacts to aesthetics was evaluated in relation to the closely related past, present, and reasonable foreseeable and probable future projects described in Table 2.6-1, *List of Related Projects*.

The proposed project would not result in cumulative impacts to aesthetics when considered in conjunction with related projects. As with the proposed project, the City of Long Beach projects involve development that would potentially result in impacts to aesthetics; however, due to the vicinity of the other development projects to the proposed project area, the proposed project would not result in cumulative impacts when considered in conjunction with the other projects.

3.1.6 Mitigation Measures

Measure Aesthetics-1

The potential increase in the amount of light and glare produced due to implementation of the security lighting provided for each element of the proposed project shall be reduced to below the threshold of significance by mandating the design type of the light fixtures, light standard height, and light fixture and standard orientation. Prior to completion of final plans and specifications for each structural element of the project, lighting plans and specifications shall be submitted to the City of Long Beach Department of Public Works for review to ensure that all light fixtures shall use glare control visors, arc tube suppression caps, and a photometric design that maintains 70 percent of the light intensity in the lower half of the light beam, or comparable design or technology, to achieve those criteria. This requirement shall apply to all elements of the project: Todd Cancer Institute Phases I and II; Miller

Children's Hospital (MCH) pediatric inpatient tower Phases I and II, and central plant building; MCH pediatric outpatient building; MCH link building; roadway realignment; and parking improvements. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Public Works.

Measure Aesthetics-2

The potential increase in the amount of glare produced due to implementation of the structural elements of the proposed project shall be reduced to below the threshold of significance by mandating the design type of the reflective surface of the buildings, careful selection of exterior building materials, and window glass treatments. Prior to the completion of final plans and specifications for each structural element of the project, plans and specifications shall be submitted to the City of Long Beach Department of Public Works for review to ensure that the selection of exterior building materials and window glass treatments would not create uncomfortable levels of glare on public roadways or surrounding redirected areas for the structural elements of the project: Todd Cancer Institute Phases I and II, Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, MCH pediatric outpatient building, and MCH link building. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Public Works.

3.1.7 Level of Significance after Mitigation

Implementation of mitigation measures Aesthetics-1 and Aesthetics-2 would reduce significant impacts to aesthetics from the potential for substantial new sources of light and glare to below the level of significance.

3.2 AIR QUALITY

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to air quality. Therefore, this issue is carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to air quality and to identify potential alternatives.

The analysis of air quality includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Air quality at the proposed project site was evaluated in accordance with the methodologies and information provided by Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD),[2] and Air Quality Technical Report prepared by SCS Engineers (Appendix C, *Air Quality Technical Report*).

3.2.1 Regulatory Framework

This regulatory framework identifies the federal and state laws that govern the regulation of air quality and that must be considered by the City of Long Beach regarding decisions on projects that involve construction, operation, or maintenance activities that would result in air emissions.

Responsibility for attaining and maintaining ambient air quality standards in California is divided between the California Air Resources Board (CARB) and regional air pollution control or air quality management districts. Areas of control for the regional districts are set by CARB, which divides the state into air basins. These air basins are largely based on topography that limits air flow access, or by county boundaries.

Federal

Federal Clean Air Act

The federal Clean Air Act (CAA) requires that states prepare State Implementation Plans (SIP), whose purpose is to attain and maintain the National Ambient Air Quality Standards (NAAQS). Section 176(c) of the federal CAA, as amended in 1990, established the criteria and procedures by which the Federal Highway Administration (FHWA) (Title 23 U.S. Code), the Federal Transit Administrations (FTA),[3] and metropolitan planning organizations (MPOs) determine the conformity of federally funded or approved highway and transit plans, programs, and projects to SIPs. The

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Contact: 21865 Copley Drive, Diamond Bar, CA 91765.

[3] Office of the Federal Register. 24 November 1993. *Federal Register*. 58 FR 62188: "Transportation Conformity Rule." Washington, DC: Government Printing Office.

provisions of 40 CFR Parts 51 and 93[4] apply in all nonattainment and maintenance areas for criteria pollutants for which the area is designated nonattainment or has a maintenance plan.

The U.S. Environmental Protection Agency (EPA) sets the NAAQS. Existing NAAQS are presented together with state standards in Table 3.2.1-1, *Ambient Air Quality Standards*. In July 1997, the U.S. EPA promulgated stricter standards for ozone (O_3) and fine particulate ($PM_{2.5}$); however, deadlines for attaining the standards were extended over original proposals, with up to 15 years allowed for attaining the $PM_{2.5}$ standard. The PM_{10} standard was revised, but the existing PM_{10} standard remains in effect until attainment is achieved. Until there has been sufficient monitoring for the U.S. EPA to designate the $PM_{2.5}$ attainment status for each region, the PM_{10} standard will remain the particulate standard of reference. However, federal enforcement of the new standards are currently on hold pending the outcome of an appeal by the U.S. EPA of a 2 to 1 decision by a three-judge panel of the U.S. Court of Appeals for the District of Columbia on May 14, 1999. This decision removed the revised federal PM_{10} standard, put a hold on implementing the eight-hour ozone standard, and asked for further comments on the $PM_{2.5}$ standard.

The 1990 amendments to the federal CAA divide the nation into five categories of planning regions, depending on the severity of their pollution, and set new timetables for attaining the NAAQS. The categories range from "marginal" to "extreme." Attainment deadlines are from 3 to 20 years, depending on the category. The Los Angeles Basin (Basin) is the only region in the nation classified as an "extreme" ozone nonattainment area. For areas designated "extreme," Section 181 of the federal CAA sets the ozone attainment deadline at year 2010. Federal deadlines for attaining carbon monoxide (CO) and PM_{10} standards in this region are years 2000 and 2005, respectively. The Basin could not demonstrate attainment by the year 2000 deadline because the eight-hour federal standard was exceeded twice in year 2000 in south central Los Angeles County. However, there was no exceedance of any CO standard anywhere in the Basin in 2001. In 2002, the Basin could not demonstrate attainment because the eight-hour federal standard was exceeded once in south central Los Angeles County.

Section 182(e)(5) of the federal CAA allows the U.S. EPA administrator to approve provisions of an attainment strategy in an "extreme" area that anticipates development of new control techniques or improvement of existing control technologies, if such provisions are not needed to achieve required incremental reductions to the year 2000; and the state has submitted enforceable commitments to develop and adopt contingency measures to be implemented, if the anticipated technologies do not achieve planned reductions.

The U.S. EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the federal CAA. If a state fails to correct these planning deficiencies within two years of federal notification, the U.S. EPA is required to develop a federal implementation plan (FIP) for the identified nonattainment area or areas.

[4] Final Rule effective September 15, 1997.

TABLE 3.2.1-1
AMBIENT AIR QUALITY STANDARDS

	National		State
Air Pollutant	**Primary**	**Secondary**	**Standard**
Ozone (O_3)	0.12 ppm, 1-hr avg.	0.12 ppm, 1-hr avg.	0.09 ppm, 1-hr avg.
Carbon monoxide (CO)	9.5 ppm, 8-hr avg. 35 ppm, 1-hr avg.	9.5 ppm, 8-hr avg. 35 ppm, 1-hr avg.	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.
Nitrogen dioxide (NO_2)	0.0534 ppm, annual avg.	0.0534 ppm, annual avg.	0.25 ppm, 1-hr avg.
Sulfur dioxide (SO_2)	0.03 ppm, annual avg. 0.14 ppm, 24-hr avg.	0.50 ppm, 3-hr avg.	25 ppm, 1-hr avg. 0.04 ppm, 24-hr avg.
Suspended particulate matter (PM_{10})	150 $\mu g/m^3$, 24-hr avg. 50 $\mu g/m^3$ AAM	150 $\mu g/m^3$, 24-hr avg. 50 $\mu g/m^3$ AAM	50 $\mu g/m^3$, 24-hr avg. 30 $\mu g/m^3$ AGM
Particulate matter ($PM_{2.5}$)	65 $\mu g/m^3$, 24-hr avg. 15 $\mu g/m^3$ AAM	65 $\mu g/m^3$, 24-hr avg. 15 $\mu g/m^3$ AAM	12 $\mu g/m^3$ AGM
Sulfates (SO_4)	—	—	25 $\mu g/m^3$, 24-hr avg.
Lead (Pb)	1.5 $\mu g/m^3$, calendar quarter	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$, monthly avg.
Hydrogen sulfide (H_2S)	—	—	0.03 ppm, 1-hr avg.
Vinyl chloride	—	—	0.010 ppm, 24-hr avg.
Visibility-reducing particles	—	—	Insufficient amount to reduce prevailing visibility to less than 10 miles at relative humidity less than 70 percent, 1 observation

KEY:
AAM = annual arithmetic mean
AGM = annual geometric mean
avg. = average
hr = hour
$\mu g/m^3$ = micrograms per cubic meter
ppm = parts per million by volume
SOURCE: California Air Resources Board. 9 July 2003. *Ambient Air Quality Standards*. Available at: http://www.arb.ca.gov/aqs/aaqs2.pdf

State

California Clean Air Act

The California CAA of 1988 requires all air pollution control districts in the state to endeavor to achieve and maintain state ambient air quality standards for O_3, CO, and NO_2 by the earliest practicable date, and to develop plans and regulations specifying how they will meet this goal. There are no planning requirements for the state PM_{10} standard. California's ambient air standards are generally stricter than national standards for the same pollutants, but there is no penalty for nonattainment. California has also established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles, for which there are no national standards (Table 3.2.1-1).

Regional

South Coast Air Quality Management District

On a regional level, the SCAQMD and the Southern California Association of Governments (SCAG) have responsibility under state law to prepare the Air Quality Management Plan (AQMP), which contains measures to meet state and federal requirements. When approved by CARB and the U.S. EPA, the AQMP becomes part of the SIP.

These agencies adopted plans to meet the national and state standards, known as the 1999 AQMP, which was approved by the U.S. EPA on May 10, 2000, as the federally enforceable ozone SIP for the Basin. However, the CO portion of the 1999 AQMP was not approved by the U.S. EPA and there is currently no approved CO attainment or maintenance SIP for the Basin. The 2003 revision, now undergoing public review, demonstrates that the national CO standards have been attained and that the 2003 AQMP will serve as both the CO attainment and maintenance SIP when approved by the U.S. EPA.

Local

City of Long Beach General Plan

The City of Long Beach adopted the current Air Quality element to their General Plan in December 1996.[5] The purpose of the Air Quality element is to promote healthful air for citizens of the City of Long Beach. The Air Quality element establishes goals, policies, and actions under the direction of the following principles:

- Achieve air quality improvements in such a manner that sustains current economic development while encouraging future growth.
- Improve the quality of life for citizens by providing greater opportunities, convenience, and choice.
- Reinforce local mobility goals by reducing peak-hour traffic congestion.
- Foster behavior change through public information and education, incentives, and pricing that reflects total societal costs for administration and enforcement.

The Air Quality element is divided into seven topic areas, each supported by a general long-range goal for directing efforts. The topic areas are as follows:

- Government organization, roles, and responsibilities
- Ground transportation
- Air transportation
- Land use
- Particulate emission
- Energy conservation
- Education

[5] City of Long Beach, Department of Planning and Building. December 1996. *Air Quality Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

Each goal is reinforced by a series of policies that are to be implemented through a number of actions. Of these actions, the following 13 have been taken into consideration in the planning and evaluation of the proposed project:

- Action 2.1.2.2—Promote trip reduction programs, such as carpool incentives, vanpools, telecommuting, and free transit passes among City employees, to set an example for private employers.

- Action 2.3.1.1—Promote expansion, marketing, and improved quality of service of Long Beach Transit to double transit ridership by year 2010.

- Action 2.3.1.10—Promote employer participation in a regional transit voucher system where employee benefit options may include provision of vouchers to be accepted on all Southern California transit systems.

- Action 2.4.1.3—Ensure that all new development is designed and constructed to facilitate and encourage travel by carpool, vanpool, transit, bicycle, and foot.

- Action 2.4.1.10—Ensure that pedestrian walkways are safe, convenient, and aesthetically pleasing, especially at major activity centers.

- Action 2.4.1.11—Establish parking policies at employment centers consistent with the demand management provisions of the element and of the Trip Reduction Ordinance.

- Action 5.1.1—Increase residential densities and commercial intensities close to transit stations to improve the effectiveness and usage of transit and other nonautomotive forms of transportation.

- Action 5.1.5—Develop incentives to encourage in-fill development near activity centers and along transportation corridors to increase participation in alternative modes of travel.

- Action 5.2.1—Improve the jobs-to-housing balance through new development and redevelopment project reviews and actions.

- Action 6.1.1—Evaluate current efforts to regulate construction and renovation methods minimizing emissions from building materials and the construction process to ensure their maximum effectiveness, taking into consideration public and private costs.

- Action 7.1.4—Encourage the incorporation of energy conservation features in the design of all new construction.

- Action 7.1.5—Encourage the installation of conservation devices and low energy-using/waster-consuming appliances in new and existing development.

- Action 7.2.1—Invest in the expansion of feasible recycling programs for all residents and businesses.

3.2.2 Existing Conditions

The City of Long Beach is located in the Los Angeles Basin, which is composed of a 6,600-square-mile area encompassing all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The analysis of existing conditions related to air quality includes a summary of pollutant levels prior to implementation of each component of the proposed project. All of the proposed project components are located within the Basin; therefore, all air quality data and analysis are presented as an aggregate of the entire proposed project area.

The climate of the City of Long Beach (i.e., the Basin) is categorized as Mediterranean, which is characterized by dry summers, rainy winters, and relatively modest changes in temperature. During the dry season, the Eastern Pacific High-Pressure Area (a semipermanent feature of the general hemispheric circulation pattern) dominates the weather over much of Southern California. The Eastern Pacific High-Pressure Area produces warm, very dry air that descends and caps the cool, ocean-modified air, producing a marine layer. This marine layer is the prominent weather feature for the Basin for much of the year, and occurs especially during the late spring and lasts until early fall.

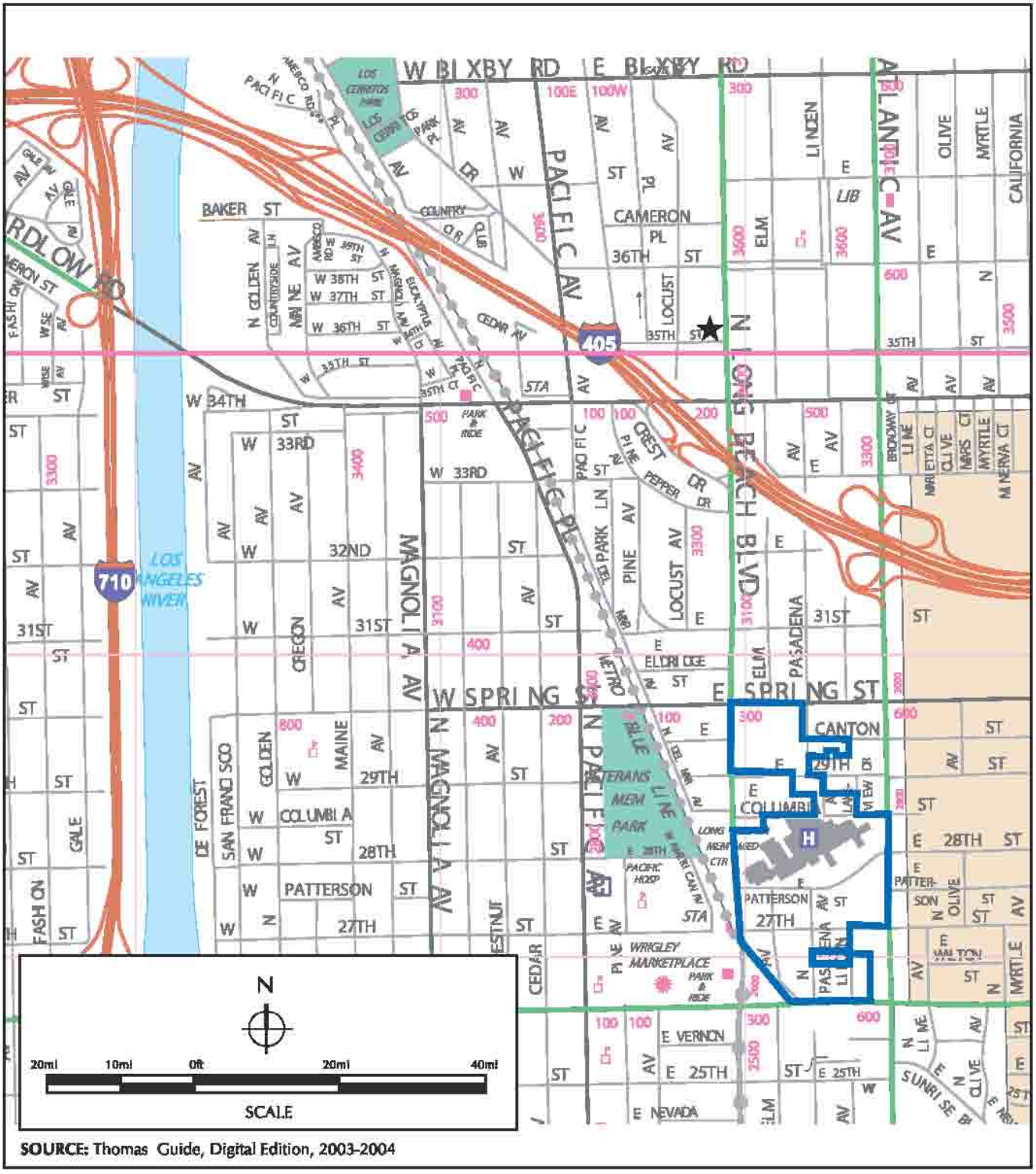
The annual average high temperature for the Basin is 75 °F, and the average low is 57 °F. Winds are generally light, with frequent afternoon sea breezes of 10 to 15 miles per hour (MPH). Severe weather is uncommon in the Basin, but strong offshore easterly winds known as the Santa Anas can reach 25 to 35 MPH below the passes and canyons. Passing winter storms can also bring southeast winds of up to gale force. However, for the most part, damaging winds tend to be rare and highly localized.[6]

The Basin's warm climate and shallow, basin-like topography, surrounded by mountains, are highly conducive to the formation and transport of air pollution. Surface pollutants, such as CO and NO_2, react with sunlight to form smog. Peak ozone concentrations in the Basin over the past two decades have occurred at the base of the mountains around Azusa and Glendora in the County of Los Angeles and at the crestline in the mountain area above the City of San Bernardino. Both the peak ozone concentrations and the number of days the standards were exceeded decreased everywhere in the Basin throughout the 1990s. CO concentrations have also dropped significantly throughout the Basin as a result of strict new emission controls and reformulated gasoline sold in winter months.

In 1990, the peak ozone concentration in central Los Angeles was 0.20 parts per million (ppm) and the state ozone standard was exceeded 32 times. In 2000, the peak reading at that same station was 0.14 ppm and the state standard was exceeded eight times. These improvements have occurred despite extensive population growth in the Basin during the decade.

The SCAQMD has divided the Basin into source-receptor areas (SRAs), based on similar meteorological and topographical features. The proposed project would be located in SRA 4, South Coastal Los Angeles County (Figure 3.2.2-1, *Air Quality Monitoring Station*). Air quality in SRA 4 is monitored at the SCAQMD's monitoring station located at 3648 North Long Beach Boulevard in the City of Long Beach. The SCAQMD is monitoring levels of both eight-hour concentrations of O_3 and $PM_{2.5}$. Where readings are available, the eight-hour O_3 and the $PM_{2.5}$ concentrations with readings for SRA 4 for the past five years, with the applicable state and national standards, are

[6] Todd R. Morris. 6 October 2003. "Letter of Introduction." Los Angeles, CA: National Weather Service Forecast Office. Available at: http://www.nwsla.noaa.gov/climate/climate_intro.html



SOURCE: Thomas Guide, Digital Edition, 2003-2004

LEGEND

- Air Quality Monitoring Station
- Long Beach Memorial Medical Center Campus Boundary

FIGURE 3.2.2-1
Air Quality Monitoring Station

shown in Table 3.2.2-1, *Summary of Air Quality Data, South Coastal Los Angeles County (SRA 4) Air Monitoring Station*.

TABLE 3.2.2-1
SUMMARY OF AIR QUALITY DATA,
SOUTH COASTAL LOS ANGELES COUNTY (SRA 4) AIR MONITORING STATION

	1998	1999[a,b]	2000	2001	2002
Ozone (O_3)					
State standard (1-hr avg; 0.09 ppm)					
National standard (1-hr avg; 0.12 ppm)					
National standard (8-hr avg; 0.08 ppm)					
Maximum 1-hr concentration (in ppm)	0.15	0.13	0.12	0.091	0.084
Maximum 8-hr concentration (in ppm)	0.11	0.08	0.08	0.070	0.065
Number of days state standard exceeded	17	3	3	0	0
Number of days national 1-hr standard exceeded	5	0	1	0	0
Number of days national 8-hr standard exceeded	9	0	4	0	0
Carbon Monoxide (CO)					
State standard (1-hr avg 20 ppm)					
National standard (1-hr avg 35 ppm)					
State standard (8-hr avg 9.0 ppm)					
National standard (8-hr avg 9 ppm)					
Maximum concentration 1-hr period (in ppm)	8.0	9.0	10.0	6.0	6.0
Maximum concentration 8-hr period (in ppm)	6.1	7.6	5.8	4.71	4.6
Number of days state/national 1-hr standard exceeded	0	0	0	0	0
Number of days state/national 8-hr standard exceeded	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
State standard (1-hr avg; 0.25 ppm)					
National standard (0.0534 AAM in ppm)					
Annual arithmetic mean (in ppm)	0.0398	0.0342	0.0313	0.0308	0.0298
Percent national standard exceeded	0	0	0	0	0
Maximum 1-hr concentration	0.17	0.13	0.14	0.13	0.13
Number of days state 1-hr standard exceeded	0	0	0	0	0
Suspended Particulates (PM_{10})					
State standard (24-hr avg; 50 g/m^3)					
National standard (24-hr avg; 150 g/m^3)					
Maximum 24-hr concentration	69	79	74	75	74
Percent of samples exceeding state standard	10.2	22	16	17	8.6
Percent of samples exceeding national standards	0	0	0	0	0
Suspended Particulates ($PM_{2.5}$)					
National standard (24-hr avg; 65 μg/m^3)					
Maximum 24-hr concentration	ND	66.9	164	72.9	62.7
Percent samples exceeding national standard	ND	0	1.3	0.3	0
AAM concentration (μg/ml)	ND	21.5	19.2	21.4	19.5

KEY:
ND = no data AAM = annual arithmetic mean mg/m^3 = milligrams per cubic meter
avg = average ppm = parts per million μg/m^3 = micrograms per cubic meter
NOTES:
[a] $PM_{2.5}$ monitoring began in 1999.
[b] Source: California Air Resources Board. No Date. Annual Data, 1999–2002. Available at: http://www.arb.ca.gov/
SOURCE: South Coast Air Quality Management District. 8 November 2002. Air Quality Data, 1998–2002. Available at: http://ozone.aqmd.gov/smog/#aqdata

The analysis of existing conditions related to air quality includes a summary of pollutant levels prior to the implementation of each component of the proposed project. All of the proposed project components are located within the Basin; therefore, all air quality data and analysis are presented as an aggregate of the entire proposed project area.

O_3 concentrations within SRA 4 have varied from year to year, but have remained relatively constant over the past five years. One-hour CO concentrations are low, and eight-hour concentrations have declined over this same five-year period. PM_{10} and $PM_{2.5}$ concentrations are affected by meteorology. The State of California 24-hour PM_{10} standard was exceeded by 8.6 to 22 percent of the samples taken during the period from 1998 to 2002, but the national standard was not exceeded in this period.[7] There are no known odor-producing substances on the proposed project site.

3.2.3 Significance Thresholds

A project's air quality impacts can be separated into short-term impacts due to construction and long-term permanent impacts from project operations. Both types of impacts may occur on a local or regional scale. The potential for the proposed project to result in impacts related to air quality was analyzed in relation to the five potential issues identified for consideration, as contained in Appendix G of the State CEQA Guidelines:

- Conflicts with or obstruct the implementation of the applicable air quality plan
- Violates any air quality standard or contribute substantially to an existing or projected air quality violation
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including release in emissions that exceed quantitative thresholds for ozone precursor)
- Exposes sensitive receptors to substantial pollutant concentrations
- Creates objectionable odors affecting a substantial number of people

Ambient air standards are established to protect the average person from health effects associated with air pollution. The standards include an "adequate margin of safety." However, some people are particularly sensitive to some pollutants. These sensitive people include the elderly, children, and persons with respiratory illnesses or impaired lung function because of other illnesses. Facilities and structures where these sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses considered to be sensitive receptors are long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities.

The County of Los Angeles relies on significance thresholds recommended by the SCAQMD in its CEQA Air Quality Handbook, as revised in November 1993 and approved by the SCAQMD's Board of Directors. The SCAQMD's emission thresholds apply to all federally regulated air

[7] California Air Resources Board. 2003. "Air Quality Data Statistics, Air Quality Summaries." Available at: http://www.arb.ca.gov/adam/welcome.html

pollutants except lead, which is not exceeded in the Basin (Table 3.2.3-1, *Emission Thresholds of Significance*).

The SCAQMD is currently in the process of preparing a new air quality handbook, AQMD Air Quality Analysis Guidance Handbook. Chapters 2, 3, and 4 related to air quality background information and the roles of regulatory agencies are available online at SCAQMD's Web site. Other chapters will be posted there as they become available. The chapters completed to date make no change in significance thresholds or analysis methodology.

TABLE 3.2.3-1
EMISSION THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction		Operations
	pounds/day	tons/quarter	pounds/day
Carbon monoxide (CO)	550	24.75	550
Sulfur oxides (SO_x)	150	6.75	150
Particulate matter (PM_{10})	150	6.75	150
Nitrogen oxides (NO_x)	100	2.5	55
Volatile organic compounds (VOCs)	75	2.5	55

SOURCE: South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Contact: 21865 Copley Drive, Diamond Bar, CA 91765.

CO concentrations in an area that exceeds national or state standards are considered significant if the increase exceeds 1 ppm averaged over one hour, or 0.45 ppm averaged over eight hours.

3.2.4 Impact Analysis

This section analyzes the potential for significant impacts to air quality that would occur from implementation of the proposed project. Air quality impacts of a project generally fall into four major categories:

- *Construction Impacts*—temporary impacts, including airborne dust from grading, demolition, and dirt hauling; and gaseous emissions from heavy equipment, delivery and dirt-hauling trucks, employee vehicles, and paints and coatings. Construction emissions vary substantially from day to day, depending on the level of construction phase and weather conditions.

- *Operational Regional Impacts*—primarily gaseous emissions from natural gas and electricity usage and vehicles traveling to and from a project site.

- *Operational Local Impacts*—increases in pollutant concentrations, primarily carbon monoxide, resulting from traffic increases in the immediate vicinity of a project, as well as any toxic and odor emissions generated on site.

- *Cumulative Impacts*—air quality changes resulting from the incremental impact of the project when added to other projects in the vicinity.

Construction Impacts

The proposed project is expected to result in significant impacts to air quality during construction due to exceedances of the SCAQMD thresholds for CO, NOx, and reactive organic gas (ROG) emissions. The proposed project is anticipated to be developed in phases, based on demand and available funding as described in Section 2.4.8, Construction Scenarios, of this EIR. The timeline for construction of the different buildings at the site will result in the likelihood of overlapping construction activities.

Potential emission estimates from construction activities are based on emission factors and construction scenario information for development at the site. The total amount of construction, including duration and level of construction activity occurring at the site, would influence the estimated construction emissions and resulting potential impacts. The emission forecasts are therefore based on conservative assumptions about the construction scenario, with a large amount of construction activity occurring in a relatively short time frame. In addition, worker commute trips will vary throughout the construction period. Estimates included in this analysis include the highest potential worker commute trips. Due to the conservative nature of these assumptions, actual emissions from the individual construction projects would most likely be less than the estimates forecasted.

Construction emissions are expected to result from the following activities:

- Demolition of existing structures
- Site grading
- Soil removal
- Delivery and hauling of construction materials and equipment
- Fuel combustion by on-site construction equipment
- Construction worker commute trips
- Application of architectural coatings
- Asphalt operations

The proposed project shall include the demolition of two structures: the existing 86-space parking structure at the Miller Children's Hospital (MCH) to accommodate construction of the inpatient tower and the wood-framed WIC Building to accommodate the central plant building. Construction of surface parking areas Q, R, S, and T shall require the demolition of 14 residential structures. Dimensions for the structures were estimated from the proposed project site plan. Demolition of the structures shall be preceded by asbestos abatement, as necessary. The contractor shall comply with requirements of SCAQMD Rule 1403 regarding asbestos control during demolition. This rule ensures that if there is any asbestos present in the buildings scheduled for demolition, it is removed and encapsulated prior to demolition so that no asbestos fibers are released. The SCAQMD CEQA Air Quality Handbook states that asbestos emissions from a project are fully mitigated and do not present a significant impact when the project is in compliance with Rule 1403. In addition, should any contamination be found to be present in the soils in the area exposed after demolition, construction shall stop and appropriate health and safety procedures and agency coordination shall be undertaken prior to continuing work on site.

Estimates of construction work for the proposed project indicate a maximum of 16 acres of disturbance area within the proposed project site. In addition, potentially contaminated soil in the former ravine and around the proposed project site must be removed prior to construction. Fugitive

dust emissions from soil handling during remediation were estimated using the Compilation of Air Pollution Emissions Factors, AP-42.[8] Potential volatile organic compound (VOC) emissions from the removal of VOC-contaminated soil were estimated using the assumption that 50 percent of VOCs in the soil would be released during the excavation and stockpiling process, prior to removal from the site for disposal. A conservative estimate of 57.8 ppm VOCs in the soil was used, which represents the sum of the maximum levels of VOCs found in the soil boring at the proposed project site, as evaluated by SCS Engineers.

Maximum potential air quality impacts were determined by calculating emissions using a worst-case daily construction scenario for each phase. The analysis also considered the potential overlap of construction activities of different projects at the site. Equipment mixes and amount of activity for construction for each phase and building were calculated using the phasing schedule and equipment list provided for each element of the proposed project in Section 2.4.8, Construction Scenarios, of this EIR. Maximum daily construction emissions for each building and each phase are presented in Table 3.2.4-1, *Project-Related Maximum Daily Regional Construction Emissions before Mitigation*.

TABLE 3.2.4-1
PROJECT-RELATED MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS BEFORE MITIGATION[1]

	CO (lbs/day)	SO_x (lbs/day)	PM_{10}[2] (lbs/day)	NO_x (lbs/day)	ROG (lbs/day)
TCI Phase I	327.47	0.03	29.87	338.06	161.1
MCH utility trench	99.14	0	9.9	105.23	13.44
Roadway realignment	216.84	0.43	49.67	224.71	28.51
Parking structure	361.95	0.23	35.03	344.21	46.3
MCH inpatient tower Phase I	594	0.13	35.34	550.33	162.05
MCH outpatient building	589.52	0.17	36.35	578.85	150.63
MCH central plant building	90.59	0.01	8.95	84.71	11.62
TCI Phase II	230.81	0	25.48	170.78	92.55
MCH link building	230.76	0.01	10.53	170.38	58.27
MCH inpatient tower Phase II	432.95	0.02	12.69	313.15	119.04
Worst-case daily emissions[3]	1758.25	0.47	86.94	1758.21	352.21
SCAQMD thresholds	550	150	150	100	75
Significant?	Yes	No	No	Yes	Yes

NOTES:
[1] Maximum daily emissions are the maximum emissions of each pollutant from any stage (i.e., demolition, soil excavation, site grading, or building construction) of the construction activities.
[2] PM_{10} is the total of PM_{10} dust and PM_{10} exhaust.
[3] Worst-case daily emissions are based on estimated emissions from July 2006, when maximum daily emissions from grading for the central plant building and building construction of TCI Phase I, MCH inpatient tower Phase I, MCH utility trench, MCH outpatient building, and the parking structure have the potential to occur simultaneously.

Pollutant emissions were estimated using CARB's URBEMIS2002 model, a methodology approved by the SCAQMD. The URBEMIS2002 model separates construction emissions into three phases: (1) demolition, (2) site grading, and (3) building construction. Demolition emissions include demolition fugitive dust, on-road emissions from truck trips for hauling debris, off-road emissions from equipment, and worker commute trips. Site grading emissions include fugitive dust, on-road

[8] U.S. Environmental Protection Agency. 1973. "Compilation of Air Pollution Emissions Factors. AP-42." Available at: http://www.epa.gov/ttn/chief/ap42/index.html

emissions from truck trips for hauling soil, off-road emissions from equipment, and worker commute trips. Building construction emissions are subdivided into building construction (i.e., equipment and worker commute), application of architectural coatings (i.e., architectural emission off-gassing and worker commute), and asphalt (i.e., asphalt off-gassing, equipment, truck trips, and worker commute). Equipment exhaust emissions were determined using the URBEMIS2002 default values for horsepower, load factors, and working schedule (i.e., 8 hours per day, 22 days per month). The URBEMIS2002 User's Manual[9] provides information on construction emission estimation and default assumptions. URBEMIS2002 modeling outputs are provided in Appendix C.

Concurrent construction and operation emissions would likely occur during later stages of the proposed project. Construction of the Todd Cancer Institute (TCI) Phase II and the MCH link building would occur after the earlier stages of construction are complete and operational activities have commenced. Therefore, emission of concurrent construction and operation activities were evaluated in accordance with the construction phasing scenario described in Section 2.4.8, Construction Scenario, of this EIR. Expected emissions would likely exceed SCAQMD significance thresholds for CO, NOx, and ROG, therefore requiring mitigation. The significance of these emissions is driven by the high level of short-term emissions from construction activities. Emissions would be expected to be less than significant for PM_{10} and SO_2 (Table 3.2.4-2, *Concurrent Construction and Operational Emissions in 2010*).

TABLE 3.2.4-2
CONCURRENT CONSTRUCTION AND OPERATIONAL EMISSIONS IN 2010

	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	NO_x (lbs/day)	ROG (lbs/day)
Net operation emissions[1]	369.26	2.32	50.24	66.08	30.66
Construction emissions[2]	453.04	0.00	12.95	340.46	150.13
Total combined emissions	822.30	2.32	63.19	406.54	180.79
SCAQMD construction significance threshold	550	150	150	100	75
Significant?	Yes	No	No	Yes	Yes
SCAQMD operation significance threshold	550	150	150	55	55
Significant?	Yes	No	No	Yes	Yes

NOTES:
[1] The estimated emissions represent year 2010 vehicle trips, energy consumption, and area source emissions. Emissions of NO_x, ROG, and CO are reduced at build-out due to the expected reduction in vehicle emissions into the future, as modeled by EMFAC2002.
[2] The estimated emissions represent the maximum daily emissions from building construction of TCI Phase II and the MCH link building for the year 2011.

Air Toxics

Construction equipment emissions during grading and construction activities at the proposed project site would include emissions of the toxic air contaminant diesel particulate matter. As mentioned above, the results of the California Multiple Air Toxics Exposure Study (MATESII) conducted by the SCAQMD indicated that air toxics in the City of Long Beach area present a carcinogenic risk of approximately 1,100 to 1,200 in a million, with approximately 90 percent of

[9] Jones & Stokes. 2003. *Software User's Guide: URBEMIS 2002 for Windows with Enhanced Construction Module*. Prepared by: Jones & Stokes Associates, 2600 V Street, Sacramento, CA 95818. Prepared for: Yolo-Solano Air Quality Management District, 1947 Galileo Court, Suite 103, Davis, CA 95616.

the risk from mobile sources (i.e., on-road vehicles), of which 70 percent is from diesel particulate. Risks associated with diesel particulate from the proposed project are qualitatively evaluated in the risk assessment (Appendix C).

Odors

Potential sources of odors during the construction phase include the use of architectural coating and solvents. Under SCAQMD Rule 1113, VOCs in architectural coatings and solvents are limited. Coating and solvents used during the proposed project must comply with these regulatory requirements, thereby limiting the potential for objectionable odors. Therefore, no odor impacts would be expected.

Operational Impacts

The proposed project would be anticipated to have significant impacts to air quality during operations due to the exceedance of the SCAQMD threshold for NO_x. Operational air emissions at the proposed project site are likely to result from both stationary sources (i.e., natural gas, landscaping, and consumer products) and mobile sources. Emissions from these sources were modeled using URBEMIS2002. Mobile source emissions in URBEMIS2002 are based on the EMFAC2002 Version 2.2 emission inventory model, which projects emission estimates based the expected vehicle fleet mix for the estimated start date of the project, the vehicle speed and distance assumptions, and temperature conditions. Trip generation rates were determined using the values included in URBEMIS2002, based on the land uses to be developed at the proposed project site. Vehicle speeds, distances, and fleet mix were based on the default values in the URBEMIS2002 model (Table 3.2.4-3, *URBEMIS2002 Input Parameters for Mobile Source Emissions*). Mobile source emissions were calculated using the default values in the model (Appendix C).

TABLE 3.2.4-3
URBEMIS2002 INPUT PARAMETERS FOR MOBILE SOURCE EMISSIONS

Parameter	Value	Unit	Comment
Air Basin	South Coast		Proposed project is located in the City of Long Beach
Analysis Year	2015		Projected build-out year
Temperature	60, 75, and 85	°F	Recommended temperatures in Table A9-5-I of the SCAQMD CEQA Air Quality Handbook for CO, NO_x, and ROG emissions, respectively
Land Use Categories	Hospital = 423,920	Sq. ft.	Hospital:[1] TCI Phase I = 83,630 TCI Phase II = 42,300 MCH inpatient tower Phase I = 124,500 MCH inpatient tower Phase II = 73,500 MCH link building = 20,000 MCH outpatient building = 80,000
Vehicle Fleet Mix	Light Auto = 56 Light Truck (<3750) = 15.3 Light Truck (3751 – 5750) = 16.4 Med Truck (5751 – 8500) = 7.3 Light-Heavy (8501 – 10000) = 1.1 Light-Heavy (10001 – 14000) = 0.3 Med-Heavy (14001 – 33000) = 1.0 Heavy-Heavy (33001 – 60000) = 0.8 Line Haul (>60000) = 0 Urban Bus = 0.2 Motorcycle = 1.6 School Bus = 0 Motor Home = 0		Default values, with the exception of School Bus and Motor Home trips redistributed to Light Auto, which is more likely for the proposed project
All other parameters	Default values		Default values for Basin in URBEMIS2002

NOTE:
[1] Hospital land use is defined as any institution where medical or surgical care is given to nonambulatory and ambulatory patients, and overnight accommodations are provided.

The Long Beach Memorial Medical Center (LBMMC) and MCH are served by the Long Beach Transit Services on Willow Street, Atlantic Avenue, and Long Beach Boulevard. The Willow Metro Rail Station is located on the corner of Willow Street and Long Beach Boulevard. Easy access to these transit and rail services would have the potential to reduce patient and worker commute trips to and from the site.

On-site stationary sources would include emergency diesel generators in the central plant building, which would be used for emergency back-up power. Two diesel generators would be installed at the central plant building, with a third planned for installation during Phase II of the MCH inpatient tower. These stationary sources would require permits from the SCAQMD pursuant to Regulation II, Rules 201, 202, and 203. Emission increases related to those sources would also be subject to Regulation XIII, New Source Review, which requires the utilization of best available control

technology (BACT) to minimize emissions of CO, NO_x, VOC, and PM_{10}. The generators would be used in an emergency back-up capacity and, unless a power failure occurs, are not expected to be operated for greater than 1 hour per month for routine maintenance and testing. Emergency equipment is exempt from modeling and offset requirements under SCAQMD Rule 1304, and would not require a health risk assessment under Rule 1401. Because the emergency generators would be under permit with the SCAQMD and would meet BACT requirements, any potential air quality impacts from these sources are expected to be less than significant and would not require further mitigation.

Emissions from stationary and mobile sources during project operation were summed to determine total daily emissions. These emissions were then compared to SCAQMD significance thresholds (Table 3.2.4-4, *Project-Related Maximum Operational Emissions at Build-Out*). Operational emissions at build-out were determined to be less than significant for CO, SO_x, PM_{10}, and ROG. The potential daily maximum NO_x emissions at build-out were determined to be greater than the SCAQMD significance threshold, and thus would require mitigation.

As identified in the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural operations, wastewater treatment facilities, food-processing plants, chemical manufacturing, composting, refineries, landfills, dairies, and fiberglass operations. The proposed project would not include any land uses identified as being associated with odors. Therefore, project operation would not be expected to create adverse odors and would not be expected to result in significant impacts requiring mitigation.

TABLE 3.2.4-4
PROJECT-RELATED MAXIMUM OPERATIONAL EMISSIONS AT BUILD-OUT

	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	NO_x (lbs/day)	ROG (lbs/day)
Area sources	1.71	0.00	0.01	2.83	0.29
Energy consumption	5.04	3.02	1.01	28.98	0.25
Operational (vehicle) sources	279.20	0.36	64.12	32.28	25.27
Total emissions at build-out	285.95	3.38	65.14	64.09	25.81
SCAQMD thresholds	500	150	150	55	55
Significant?	No	No	No	Yes	No

Sensitive Receptors

The proposed project improvements would be located on the LBMMC campus (Campus), near existing inpatient and outpatient medical facilities. Land uses identified to be sensitive receptors by SCAQMD in the CEQA Handbook include long-term health care facilities, rehabilitation centers, and convalescent centers. People with compromised immune systems may be exposed to emissions released from the proposed project. The greatest potential for exposure of sensitive receptors to air contaminants would occur during the temporary construction phase, when potentially contaminated soil would be uncovered and equipment would be used for site grading, materials delivery, and building construction.

Exposure to potential emissions would vary substantially from day to day, depending on the amount of work being conducted, the weather conditions, and the location and residence time of the receptors. The construction phase emissions estimated in this analysis are based on conservative estimates and worst-case conditions, with maximum levels of construction activity

occurring simultaneously within a short period of time. Maximum potential on-site emissions are expected to occur during the potentially overlapping construction schedules for the MCH inpatient tower, utility trench, and central plant; MCH outpatient building; and the parking facilities in the southwestern portion of the Campus. Not all construction activity would occur in the immediate vicinity of sensitive receptors located at the existing inpatient facilities (LBMMC and MCH), which would limit potential acute exposures. The closest proposed project element would be the construction of the MCH inpatient tower, which is estimated to be approximately 413 feet from the center of the main LBMMC building.

The land uses identified as sensitive receptors by SCAQMD include long-term care facilities, where patients have greater potential for impacts due to prolonged exposures. Potential exposures for patients at LBMMC are expected to be acute because many of the patients visit the facility for outpatient services. Inpatient stays are conservatively estimated at 4.9 days, which is the national average length of hospital stays in the United States based on statistics provided by the Center for Disease Control.[10] In both cases, the duration of stay is much less than would be expected at a long-term care facility.

Off-site resident receptors are estimated at 5,500 feet from the MCH inpatient tower. At this distance, the construction emissions are expected to be greatly dispersed.

The risk assessment developed for the proposed project considered potential carcinogenic and noncarcinogenic risks from exposed contaminated soil for adult and child patient receptors both within the existing main LBMMC building and the MCH and TCI project buildings after the expansion. All risks were determined to be less than significant. Therefore, due to the temporary nature of these emissions and the short duration of potential exposures, sensitive receptors would not be expected to be significantly affected by the proposed project. In addition, although adult and child off-site residents do have a longer potential duration of exposure, the distance from the site would be expected to minimize potential impacts to below the level of significance.

3.2.5 Cumulative Impacts

The SCAQMD Air Quality Handbook provides guidance for conducting a cumulative impact analysis. One approach provided in the handbook suggests that analysis could be performed by analyzing whether the rate of growth in vehicle miles traveled or trips is consistent with the rate of population or household growth. To assess this indicator, population growth for the proposed project should be compared to the population projection for the build-out year. As documented in the population and housing section of the Initial Study (Appendix B, *Initial Study, NOP, and Comment Letters*), the proposed project is consistent with SCAG and City of Long Beach growth projections of 6 to 9 percent within the planning horizon; therefore, the proposed project is not expected to be growth inducing, but rather growth accommodating and would provide essential services for the anticipated population growth in the area. Development of the proposed project is consistent with the population growth in the area and is designed to serve the health care needs of the growing City of Long Beach population. Furthermore, as operational emissions from the proposed project are individually insignificant and would be consistent with land use plans and zoning, cumulative emissions are considered to be accounted for in the forecasting for the AQMP. Therefore, under this analysis, the proposed project would not be expected to result in a cumulatively significant impact to air quality.

[10] Centers for Disease Control, National Center for Health Statistics. 2002. *Hospital Utilization in Non-Federal Short Stay Hospitals*. Available at: http://www.cdc.gov/nchs/fastats/hospital.htm

3.2.6 Mitigation Measures

The following air quality mitigation measures are provided to reduce the potential air quality impacts from both the construction and operational phases of the proposed project.

Measure Air-1

As part of the request for the demolition permit for the 86-car parking structure, the WIC Building, and existing structures located at the proposed location of surface parking areas Q, R, S, and T, the Long Beach Memorial Medical Center shall demonstrate that asbestos-containing materials in these structures have been identified and adequately abated, or that the contractor has been informed of the need to identify and abate asbestos-containing materials consistent with the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1403. Specifically, all asbestos-containing material shall be removed and encapsulated prior to demolition, such that no asbestos fibers are released.

Measure Air-2

Prior to advertising for construction bids for each structural element of the proposed project, the plans and specifications shall be reviewed by the lead agency to ensure that the requirement to comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 1403, Rule 402, and Rule 403, is included. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The specifications shall require the construction contractor to present a Rule 402/Rule 403 compliance plan at the construction start-up meeting, prior to demolition, construction staging, or grading. The Rule 402/Rule 403 compliance plan shall include mitigation measures Air-2 through Air-12, or comparable measures to prevent nuisance dust and visible emissions. The construction activities related to the proposed project shall comply with SCAQMD regulations, including Rule 1403, Rule 402, and Rule 403. Rule 402 specifies that there shall be no dust impacts off site that would be sufficient to cause a nuisance. Rule 403 specifies that construction activities shall restrict visible emissions from occurring. The contractor's Rule 402/Rule 403 compliance plan shall be subject to approval by the City of Long Beach. Weekly inspections shall be undertaken by the City of Long Beach to ensure conformance with the approved Rule 402/Rule 403 compliance plan.

Measure Air-3

Soil moistening shall be required to treat exposed soil during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the plans and specifications shall be reviewed by the lead agency to ensure that the requirement for the construction contractor to ensure that soil is moistened prior to grading and that soil moisture content is maintained at a minimum of 12 percent for all grading activities is included. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The

construction contractor shall demonstrate compliance with this measure through the submission of weekly monitoring reports to the lead agency. At a minimum, active operations shall utilize one or more of the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type that is part of the active operation.

Measure Air-4

Soil moistening shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to ensure that soil shall be moistened not more than 15 minutes prior to the daily commencement of soil-moving activities and three times a day, or four times a day under windy conditions, in order to maintain a soil moisture content of 12 percent. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-5

Application of water or a chemical stabilizer shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to apply water or a chemical stabilizer to maintain a stabilized surface on the last day of active operations prior to a weekend or holiday. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-6

Moistening or covering of excavated soil piles shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to ensure that excavated soil piles are watered hourly for the duration of construction or covered with temporary coverings. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-7

Discontinuing grading activities during windy conditions shall be required to treat grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to cease grading during periods when winds exceed 25 miles per hour. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-8

Moistening excavated soil prior to loading on trucks shall be required at all grading areas during construction of each element of the proposed project to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in critical pollutants. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to moisten excavated soil prior to loading on trucks. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-9

Transport of soils to and from the proposed project site for each element of the proposed project shall be conducted in a manner that avoids fugitive dust emissions, ensures compliance with current air quality standards, and avoids contributions to cumulative increases in criteria pollutants. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to cover all loads of dirt leaving the site or to leave sufficient freeboard capacity in the truck to prevent fugitive dust emissions en route to the disposal site. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-10

Washing of wheels leaving the construction site during construction of each element of the proposed project shall be required to avoid fugitive dust emissions, ensure compliance with current air quality standards, and avoid contributions to cumulative increases in criteria pollutants. The lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to clean adjacent streets of tracked

dirt at the end of each workday or install on-site wheel-washing facilities. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-11

Turning off engines and equipment when not in use shall be required to reduce vehicular emissions during construction of each element of the proposed project. Prior to advertising for construction bids for the proposed project, the lead agency shall ensure that the plans and specifications for each element of the proposed project include the requirement for the construction contractor to reduce idling emissions by turning off equipment and truck engines when not in use for five minutes or more. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-12

Concurrent use of multiple pieces of heavy equipment beyond the levels described in the construction scenarios shall be prohibited to the maximum extent feasible to reduce vehicular emissions. Prior to advertising for construction bids for each element of the proposed project, the lead agency shall ensure that the plans and specifications include the requirement to minimize to the maximum extent practicable the concurrent use of multiple pieces of heavy equipment for each element of the proposed project during construction activities. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

Measure Air-13

Carpooling and use of public transportation shall be encouraged to reduce vehicular emissions. The lead agency shall ensure that the plans and specifications include the requirement for the construction contractor to encourage construction workers to use public transit and carpools. The Office of Statewide Health Planning and Development shall be the lead agency for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench. The City of Long Beach shall be the lead agency for the Todd Cancer Institute Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities.

3.2.7 Level of Significance after Mitigation

Implementation of mitigation measures Air-1 through Air-13 would reduce potential impacts on air quality from the construction and operation of the proposed project to the maximum extent feasible, in accordance with the guidance provided by the SCAQMD. However, impacts to air quality from construction emissions of NO_x would remain significant.

3.3 CULTURAL RESOURCES

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) determined that the proposed project may result in environmental impacts to cultural resources. Therefore, this issue is being carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to cultural resources and to identify potential alternatives.

The analysis of cultural resources consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. The cultural resources at the proposed project site were evaluated with regard to a query of the South Central Coastal Information Center (SCCIC), the Natural History Museum of Los Angeles County (NHMLAC), the Native American Heritage Commission (NAHC), the City of Long Beach Web site, and the County of Los Angeles Office of the Assessor's Online Parcel Viewer (Assessor). Published and unpublished literature was reviewed. In addition, a Phase I Pedestrian Survey of the proposed project was conducted to determine if cultural resources are present. The potential for impacts to cultural resources have been analyzed in accordance with the data compiled by Sapphos Environmental, Inc., which included the archival and record search and a pedestrian survey of the proposed project area conducted on October 8, 2004, and October 14, 2004.

3.3.1 Regulatory Framework

Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, declares a national policy of historic preservation and encourages such preservation. It established an Advisory Council on Historic Preservation (ACHP) and provided procedures for the federal agency to follow if a proposal could affect a property that is included or eligible for inclusion in the National Register of Historic Places (NRHP). The ACHP developed procedure 36 CFR Part 800, which must be followed on any federal project of action.

National Register of Historic Places

The NRHP is the official list of properties recognized for their significance and deemed worthy of preservation. The NRHP Criteria for Evaluation offers a guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. As established in the NHPA of 1966, to be listed in the NRHP, or to be determined eligible for listing, properties must meet certain criteria for historic or cultural significance. Qualities of significance may be found in aspects of American history, architecture (interpreted in the broadest sense to include landscape architecture and planning), archaeology, engineering, and culture.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A — It is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B — It is associated with the lives of persons significant in our past

Criterion C — It embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction

Criterion D — It has yielded, or may be likely to yield, information important in prehistory or history.

To be eligible, qualities of integrity must also be evident in the resource, measured by the degree to which it retains its historic location, design, setting, materials, workmanship, feeling, and association. In general, the resource must be 50 years of age to be considered for the NRHP, but there are exceptions and overriding considerations to this criterion.

Listing in the NRHP does not, in and of itself, provide protection for a historic resource. The primary effect of NRHP listing for the owners of historic buildings is the availability of financial and tax incentives. In addition, for projects that receive federal funding, the Section 106 process must be completed.

NRHP: Eligibility of Districts

NRHP Bulletin 15 states the following:

> A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.[2]

A district derives its importance from being a unified entity:

> The identity of a district results from the interrelationship of its resources, which can convey a visual sense of the overall historic environment or be an arrangement of historically or functionally related properties.[3]

The district must be both an identifiable entity and significant under the NRHP criteria. Resources within districts are further divided into two categories: contributing and noncontributing.

[2] National Park Service. 1998. *National Register Bulletin, 15: How to Apply the National Register Criteria for Evaluation.* Washington, DC: National Park Service. Available at: http://www.cr.nps.gov\nr\publications\bulletins\nrb15\

[3] National Park Service. 1998. *National Register Bulletin, 15: How to Apply the National Register Criteria for Evaluation.* Washington D.C.: National Park Service. Available at: http://www.cr.nps.gov\nr\publications\bulletins\nrb15\

There are some special considerations in assessing the integrity of a potential NRHP district:

> For a district to retain integrity as a whole, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished. In addition, the relationships among the district's components must be substantially unchanged since the period of significance. . . . Properties eligible under Criteria A, B, and C must not only retain their essential physical features, but the features must be visible enough to convey their significance.[4]

Evaluation of Resources Less than 50 Years Old

The NRHP guidelines allow for buildings less than 50 years old to be considered under Criteria Consideration G, which states that "a property (which has achieved) significance within the past fifty years is eligible if it is of exceptional importance."[5] The explanation of the guideline is as follows:

> Fifty years is a general estimate of the time needed to develop historical perspective and to evaluate significance. This consideration guards against the listing of properties of passing contemporary interest and ensures that the NRHP is a list of truly historic places.[6]

It has been determined that all previously identified historic archaeological sites that occur on site are not eligible for inclusion under the NRHP.

Native American Graves Protection & Repatriation Act of 1990

The Native American Graves Protection & Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency, and to provide a summary to any Native American tribe claiming affiliation.

State

California Environmental Quality Act, §21084.1: "Historical Resource; Substantial Adverse Change"[7]

For the purposes of this section, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR). Historical resources as

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[4] National Park Service. 1998. *National Register Bulletin, 15: How to Apply the National Register Criteria for Evaluation.* Washington D.C.: National Park Service. Available at: http://www.cr.nps.gov\nr\publications\bulletins\nrb15\

[5] National Park Service. 1998. *National Register Bulletin, 15: How to Apply the National Register Criteria for Evaluation.* Washington D.C.: National Park Service. Available at: http://www.cr.nps.gov\nr\publications\bulletins\nrb15\

[6] National Park Service. 1998. *National Register Bulletin, 15: How to Apply the National Register Criteria for Evaluation.* Washington D.C.: National Park Service. Available at: http://www.cr.nps.gov\nr\publications\bulletins\nrb15\

[7] California Resources Agency. 11 December 2003. California Environmental Quality Act, Chapter 2.6, §21084.1: "Historical Resource; Substantial Adverse Change." Available at: http://ceres.ca.gov/ceqa/stat/Ch_2-6.html

defined in subdivision (k) of Section 4020.1, and included as such in a local register**,** or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be a historical resource.

California Environmental Quality Act, §15064.5: "Determining the Significance of Impacts to Archeological and Historical Resources." [8]

For this purpose of this section, a resource shall be considered to be historically significant if it meets the criteria for listing on the CRHR (Public Resources Code §5024.1, Title 14 CCR, Section 4852), including the following:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- It has yielded, or may be likely to yield, important information in prehistory or history.

An adverse effect on a cultural resource is defined as:

- A substantial adverse change in the significance of a historical resource by physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings
- A change that demolishes or materially alters those physical characteristics of a historical resource that convey its significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR, or inclusion in a local register

California Health and Safety Code, Section 7052

Section 7052 of the California Health and Safety Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

[8] California Resources Agency. 16 September 2004. California Environmental Quality Act, Article 5, §15064.5: "Determining the Significance of Impacts to Archeological and Historical Resources." Available at: http://ceres.ca.gov/topic/env_law/ceqa/guidelines/art5.html

California Penal Code, Section 622.5

Section 622.5 of the California Penal Code establishes a misdemeanor penalty for injuring or destroying objects of historical or archaeological interest located on public or private lands, but specifically excludes the landowner.

California Public Resources Code, Section 5097.5

Section 5097.5 of the California Public Resources Code establishes a misdemeanor penalty for the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands.

California Register of Historical Resources

In 1992, the California Legislature established the CRHR. The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR, as instituted by the California Public Resources Code (PRC), automatically includes all California properties already listed in the NRHP and those formally determined to be eligible for the NRHP (Categories 1 and 2 in the State Inventory of Historical Resources), as well as specific listings of State Historical Landmarks and State Points of Historical Interest. The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including the following:

- Individual historic resources
- Resources that contribute to a historic district
- Resources identified as significant in historic resource surveys
- Resources with a significance rating of Category 3 through Category 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance)

A property must meet at least one of the following criteria to be eligible for inclusion in the CRHR:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- It has yielded, or may be likely to yield, information important in prehistory or history.

Evaluation of Resources Less than 50 Years Old

The California Register follows the lead of the NRHP in utilizing the 50-year threshold. A resource is usually considered for its historical significance after it reaches the age of 50 years. This threshold is not absolute; it was chosen as a reasonable span of time after which a professional evaluation of historical value/importance can be made. It has been determined that previously identified archaeological sites that occur on site are not eligible for inclusion under the CRHR.

State Historic Resources Commission and the Office of Historic Preservation

In accordance with state law (California Public Resources Code Section 5020.4), the primary responsibility of the State Historic Resources Commissions (SHRC) is to review applications for listing historic and archaeological resources on the NRHP, the CRHR, and the California Historical Landmarks and California Points of Historical Interest registration programs.

The SHRC is also charged with the following responsibilities:

- Conduct a statewide inventory of historical resources and maintain comprehensive records of these resources.
- Develop and adopt criteria for the rehabilitation of historic structures.
- Establish policies and guidelines for a comprehensive statewide historical resources plan.
- Submit an annual report to the Director of the Department of Parks and Recreation and the State Legislature giving an account of its activities, identifying unattained goals of plans and programs, and recommending needed legislation for the support of these programs.
- Consult with and consider the recommendations of public agencies, civic groups, and citizens interested in historic preservation.
- Develop criteria and procedures based on public hearings and active public participation for the selection of projects to be funded through the National Historic Preservation Fund and other federal and state grants-in-aid programs.

The Office of Historic Preservation (OHP) is the governmental agency primarily responsible for the statewide administration of the historic preservation program in California. The chief administrative officer for the OHP is the State Historic Preservation Officer (SHPO). The SHPO is also the executive secretary of the SHRC. The mission of the OHP and the SHRC, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.[9]

[9] Office of Historic Preservation. 12 June 2002. "About OHP." Available at: http://ohp.parks.ca.gov/default.asp?page_id=1066

The OHP is responsible for carrying out its mission by meeting the following goals:

- Identifying, evaluating, and registering historic properties
- Ensuring compliance with federal and state regulatory obligations
- Cooperating with traditional preservation partners while building new alliances with other community organizations and public agencies
- Encouraging the adoption of economic incentives programs designed to benefit property owners
- Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness, and, most significantly, by demonstrating leadership and stewardship for historic preservation in California

Local

Southern California Association of Governments

The Southern California Association of Governments (SCAG) Growth Management Chapter (GMC) has instituted policies regarding the protection of cultural resources. SCAG GMC Policy No. 3.21 "encourages the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites."[10]

City of Long Beach Municipal Code Section 2.63

The City of Long Beach has established a Cultural Heritage Commission to review projects that may have potential impacts to historic resources. The purpose of the Cultural Heritage Commission includes the following:

- To protect, enhance, and perpetuate areas, districts, streets, places, buildings, structures, works of art, natural features, and other similar objects that are reminders of past eras, events, and persons important in local, state, or national history, or that provide significant examples of architectural styles of the past or are landmarks in the history of architecture, or that are unique and irreplaceable assets to the city and its neighborhoods, or that provide for this and future generations significant examples of the physical surroundings in which past generations lived
- To develop and maintain appropriate settings and environments for these cultural resources
- To enhance the economic and financial benefits to the city and its inhabitants by promoting the city's tourist trade and interest and thereby stimulating community business and industry

[10] Southern California Association of Governments. 2001. *SCAG Growth Management Chapter (GMC) Policy No. 3.21.* Contact: 818 West Seventh Street, 12th Floor Los Angeles, CA 90017-3435.

- To intensify the visual and aesthetic character and diversity of the city and thus enhance its identity through the preservation of varied architectural styles that reflect the city's cultural, social, economic, political, and architectural history

- To encourage public understanding and appreciation of the unique architectural and environmental heritage of the city through education programs

- To strengthen civic pride in the beauty and notable accomplishments of the city's past, and thereby to encourage community involvement in the city's future[11]

In addition, the City of Long Beach Cultural Heritage Commission established criteria for designating historic landmarks and landmark districts, procedures for designation of historic landmarks and landmark districts, procedures for administering the certificate of appropriateness, and guidelines for an appeal process regarding decisions made on behalf of an historic resource, publicly owned resources, easements and development rights, and penalties. The Cultural Heritage Commission specified the following with regard to the destruction of an historic resource:

> Any person who constructs, alters, removes or demolishes a cultural resource in violation of this chapter shall be required to restore the building, object, site, or structure to its appearance or setting prior to the violation. Any action to enforce this provision may be brought by the city or any other interested party. The civil remedy may be in addition to, and not in lieu of, any criminal prosecution and penalty and other remedy provided by law.[12]

3.3.2 Existing Conditions

Paleontological Resources

Paleontology is the study of prehistoric life forms of plant and animal fossils. Fossils of prehistoric plants and animals are often preserved in stratigraphic layers of geologic formations, thereby preserving an aspect of California prehistory that is scientifically important, since many of these species are now extinct. Fossil-bearing geologic formations can range in both thickness and depth below ground surface from a few feet to hundreds of feet. Since geologic formations are tilted and squeezed by tectonic movement (movement of the Earth's crust), it is often difficult to predict paleontologically sensitive areas.

The NHMLAC conducted a review of in-house and U.S. Geological Survey (USGS) maps at the request of Sapphos Environmental, Inc. to ascertain the potential of paleontological resources on the proposed project site. This review included all known recorded fossil localities and specimen data in the vicinity of the proposed project area. In addition, it should be noted that a review of the USGS Long Beach

[11] City of Long Beach. 11 October 2004. City of Long Beach Municipal Code, Chapter 2.63. Available at: http://www.ci.long-beach.ca.us/apps/cityclerk/lbmc/title-02/frame.htm.

[12] City of Long Beach. 21 October 2004. City of Long Beach Municipal Code, Cultural Heritage Commission, Chapter 2.63, 2.63.110: "Penalties." Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-02/chapter-2-63.htm#P124_28773

topographic quadrangle was undertaken to identify the rock units that underlay the site.[13] The map shows that the proposed project area is within Quaternary nonmarine terrace deposits.

The paleontological records search indicated that the entire proposed project area is composed of Quaternary Alluvium with surficial deposits of older Quaternary terrace deposits. These deposits are primarily terrestrial underlain by stratum containing marine components. Vertebrate paleontological localities have not been previously recorded within the proposed project location. However, known fossil localities exist nearby that occur within a similar sedimentary deposit as occurs within the proposed project area.

The closest vertebrate fossil locality (LACM 1022) was found just east of the northern proposed project site boundary, near the intersection of Spring Street and Orange Avenue. The site produced fossilized bird specimens. Two additional vertebrate fossil localities, LACM 1021 (LACM 1932) and LACM 3245, were found farther east along Spring Street, near Cherry Avenue. LACM 1021(LACM 1932) produced a fossil mammoth, *Mammuthus,* that was recovered from an unknown depth. LACM 3245 produced an extensive fossil fish fauna consisting of seven identified fish species, *Citharichthys stigmaeus* (speckled sanddab), *Citharichthys sordidus* (Pacific sanddab), *Paralichthys californicus* (California halibut), *Parophrys vetulus* (English sole), *Lyopsetta exilis* (slender sole), *Electrona rissoi* (lanternfish), and *Lepidogobius lepidus* (bay goby), that were recovered at a depth of 37 feet. In addition, there is a strong likelihood of encountering significant terrestrial vertebrate fossils throughout the proposed project area, representing the type of fauna found at the Rancho La Brea Tar Pits or marine vertebrates from the Late Pleistocene (Quaternary) (Figure 3.3.2-1, *Areas of Paleontological and Archaeological Sensitivity*).[14]

Paleontologists consider all vertebrate fossils to be of importance. Fossils of other types, including invertebrates and plants, are also considered to be significant if they represent a new record, new species, and a most complete specimen of its kind, a rare species, or a species useful in the dating of stratigraphic information.

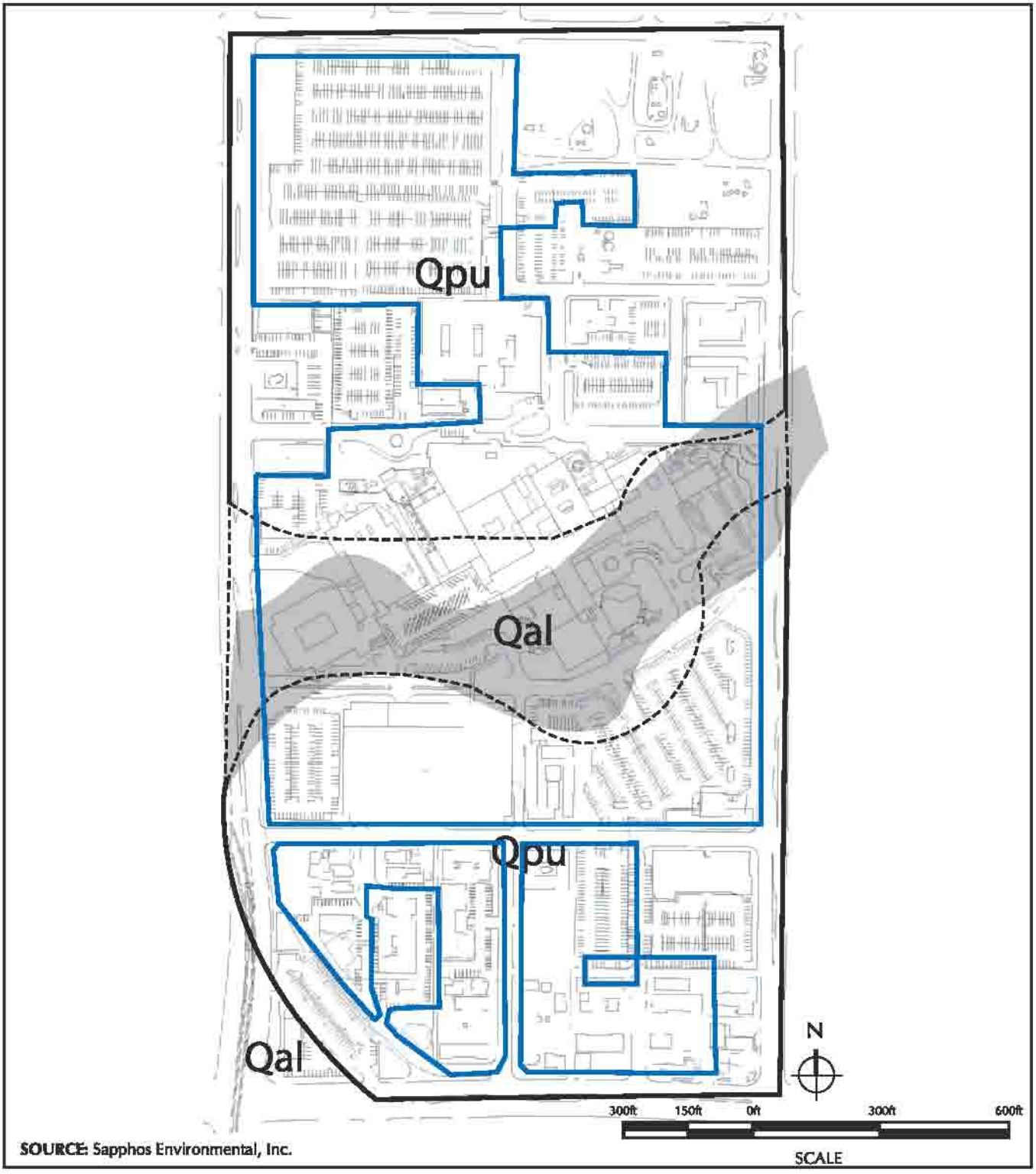
Archaeological Resources

An archaeological records check was conducted for the proposed project at the SCCIC at California State University Fullerton on July 7, 2004. This search included a review of all recorded prehistoric archaeological sites within a 0.25-mile radius of the proposed project location, as well as a review of all known relevant cultural resource survey and excavation reports. Archaeological site records are available at the SCCIC and are available for review by professional archaeologists on a need-to-know basis. Due to the sensitive nature of cultural resources, exact archaeological site locations will be maintained on file at the City of Long Beach and made available on a need-to-know basis.

The Long Beach area was home to Native American populations for approximately 11,000 years. The natural ecological environment consisted of rock outcrops, stream and river drainages, and bluffs

[13] C.W. Jennings. 1962 (Revised 1992). USGS Geologic Map of California, Long Beach Sheet (Olaf P. Jenkins Edition). Capitol Heights, MD: Williams & Heintz Map Corporation.

[14] Dr. Sam McLeod, Natural History Museum of Los Angeles County. 8 July 2004. (Letter to Ms. Laurie Solis, Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.) Subject: Paleontological Record Check.



SOURCE: Sapphos Environmental, Inc.

LEGEND

- Qal Beneath Fill
- Fill Material
- Qal — Alluvial & Coastal Deposits of Quaternary Age
- Qpu — Terrace Deposits of Quaternary Age - Resource Sensitivity Area
- LBMMC Campus Boundary

FIGURE 3.3.2-1
Areas of Paleontological and Archaeological Sensitivity

overlooking the ocean. The prehistory of the Long Beach Memorial Medical Center (LBMMC) campus is best understood in its chronological context.[15]

Prehistoric Period (Prior to 1542)

Early Man Horizon

The end of the Pleistocene Epoch, 11,000 B.C. to approximately 6,000 B.C., is known as the Early Man Horizon. Archaeological sites attributed to this horizon are composed primarily of large projectile points and scrapers (sharpened, unifacially utilized, stone implements). Available archaeological data attributed to this time period suggest that prehistoric populations focused on hunting and gathering, and moved from region to region in small nomadic groups.

Milling Stone Horizon

The Milling Stone Horizon follows the Early Man Horizon and encompasses the time period of about 6,000 B.C. to 1,000 B.C. This horizon is generally characterized by the appearance of hand stones and milling stones. Artifact assemblages from archaeological sites that date to the early part of this horizon reflect an emphasis on plant foods and foraging subsistence systems. Inland populations generally exploited grass seeds, which became the primary subsistence source. Artifact assemblages are characterized by choppers and scraper planes, and generally lack projectile points. The appearance of large projectile points in the latter portion of the Milling Stone Horizon suggests an increase in hunting activities, therefore indicating a more diverse subsistence economy.

Intermediate Horizon

The Intermediate Horizon ranging from 1,000 B.C. to A.D. 750 represents a period of transition for prehistoric Native American groups. Little is known about the people of this period, especially those occupying inland Southern California. Archaeological site assemblages possess many similar attributes of the Milling Stone Horizon. However, these sites generally contain large stemmed (or notched) projectile points and portable mortars and pestles. Mortars and pestles were used to process and consume harvested acorns. Due to the general lack of data on the subsistence system and cultural evolution of this period, the specific characteristics of the cultural behavior patterns are not well understood.

Late Prehistoric Horizon

The Late Prehistoric Horizon ranges from A.D. 750 to Spanish contact with Native American populations in A.D. 1769. This horizon reflects an increase in technological sophistication and diversity, and is characterized by the presence of small projectile points, which imply the use of bow and arrow, as opposed to spear or atlatl. In addition, site assemblages also include steatite (soapstone) bowls, asphaltum, grave goods, and elaborate shell ornaments. Utilization of bedrock milling slicks (utilization of a large rock or boulder for the grinding and processing of nuts) is prevalent throughout this horizon. In addition, an increase in hunting efficiency and widespread exploitation of acorns provided reliable and storable food resources. These innovations seem to have promoted greater

[15] William J. Wallace. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology*, *11*(3): 214–230.

sedentary behavior because they allowed people to find food and sustain themselves without having to rely on seasonal relocation.

The Gabrielino

The Gabrielino Indians of Southern California are believed to have once occupied nearly the entire basin of the Counties of Los Angeles and Orange. Although the Gabrielino Indians populated a large territory, they are in many ways considered the least known of all Southern California Native American groups. This may be attributed to their location in the Los Angles Basin, where they quickly assimilated into the mission system and European culture during the late 18th century. Early ethnographers once reported that the last individual of Gabrielino descent died about a century ago. As a result, the Gabrielino have never been granted federal recognition. Historic population estimates of the Gabrielino are difficult, but they likely ranged into the thousands. It is believed that as many as 50 to 100 villages existed at any one time during the late 18th century. Historic Spanish accounts estimated village populations to be between 50 and 200 individuals.[16]

The village of Puvungna was located approximately 5.5 miles southeast of the proposed project area. This village is of great importance to the Gabrielino people and is the center of their creation myth. The village was also the birth place of the Chinigchinich religion, which spread to other Native American groups in Southern California.[17]

The results of the record search indicated that no archaeological sites are located within the proposed project area. However, one archaeological site, 19-000839, was located on a bluff, approximately 1,500 feet northeast of the proposed project area.

- 19-000839: In December 1971, G. Fenenga of the University of California, Los Angeles recorded a 40 × 40 meter shell midden that was eroding from a ridgetop. The midden contained large amounts of shell and was covered by crude asphaltum. The site was documented northeast of the intersection of Spring Street and Atlantic Avenue, Long Beach, California.[18] J. Parker attempted to revisit the site in April 1987 during a survey of a proposed road expansion; however, the site was not found during this survey.[19]

The records search indicated that the proposed project site was not previously surveyed for the presence of archaeological resources.

[16] Lowell John Bean and Charles R. Smith. 1978. *Gabrielino, Handbook of North American Indians, Vol. 8*. Washington, DC: Smithsonian Institution. Edited by: William C. Sturtevant. Pp. 538 – 549.

[17] B.E. Johnston. 1962 (Reprinted 1964). *California's Gabrielino Indians*. Los Angeles, CA: Southwest Museum.

[18] G. Fenenga. December 1971. Archaeological Site Survey Record: CA-LAN-839 (19-000839). Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[19] J. Parker. October 1987. Update to Archaeological Site Survey Record: CA-LAN-839 (19-000839). Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

Historic Resources

A historic resources records check was conducted for the proposed project at the SCCIC at California State University Fullerton. This search included a review of all recorded historic resources within a 0.25-mile radius of the proposed project location, as well as a review of all known relevant cultural resource survey reports. Several other specific sources of information were consulted: The California State Historic Resources Inventory,[20] the NRHP,[21] the listing of California Historic Landmarks,[22] and the California Points of Historic Interest[23] were checked. The history of the proposed project location may be understood in the following chronological context.

Spanish Exploration

The consideration of historic resources begins with the arrival of the Spanish to what is now known as California. Spanish exploration of California began in 1542, when Juan Rodriguez Cabrillo and his crew sailed along the California coast. In 1579, Sir Francis Drake claimed California for England, calling it "Nova Albion." In 1602, the expedition of Sebastian Vizcaino followed the route of Cabrillo and, like Cabrillo, did not venture inland.

The Historic Period

In 1769, an expedition led by Gaspar de Portolá headed up the coast from San Diego to Monterey; the expedition arrived in what is now northern Los Angeles County on July 30, 1769. In 1784, a land grant was made to Manuel Nieto that included the land between the Santa Ana and San Gabriel Rivers, from the Coyote Hills to the ocean. This area was later divided among his heirs into five ranchos, which included the Rancho Los Alamitos and Rancho Los Cerritos, roughly the eastern and western portions of Long Beach.[24]

In 1822, Mexico declared its independence from Spain. In 1846, a lookout post was established on a hill near the center of the Pueblo de Los Angeles at the start of the Mexican War. The lookout post was named Fort Moore, after Army Captain Benjamin Moore, who had died in the Battle of San Pasqual the year before. On January 9, 1847, Commodore Stockton recaptured Los Angeles for the third and final time. Shortly after, on January 13, 1847, Captain John C. Fremont accepted the surrender of Governor Pio Pico and Commander Jose Maria Flores. The Treaty of Guadalupe Hidalgo formally annexed California to the United States in early 1848, ending the Mexican War and beginning what is referred to as the American Period in California history.[25]

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[20] Office of Historic Preservation. 2004. *California State Historic Resources Inventory*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[21] National Park Service. 2004. *National Register of Historic Places*. Contact: National Register of Historic Places, National Park Service, 1201 Eye Street, NW, 8th Floor (MS 2280), Washington, DC 20005.

[22] Office of Historic Preservation. 2004. *California Historic Landmarks*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[23] Office of Historic Preservation. 2004. *California Points of Historical Interest*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[24] D.E. Kyle (ed.). 2002. *Historic Spots in California, Fifth Edition*. Stanford, CA: Stanford University Press. Pp. 151, 155–156.

[25] D.E. Kyle (ed.). 2002. *Historic Spots in California, Fifth Edition*. Stanford, CA: Stanford University Press. Pp. xiv.

The Rancho Period

The proposed project site is located within the former Spanish land grants of the Rancho Los Cerritos and Rancho Los Alamitos.

Rancho Los Cerritos and Rancho Los Alamitos were sold to the Bixby family in 1866[26] and 1878,[27] respectively. In 1880, an Englishman named William Willmore purchased 4,000 acres of Bixby Ranch to develop the Willmore City, a town with 10-, 20-, and 40-acre farm plots surrounded by trees, parks, and boulevards. Unfortunately, by 1884, Willmore's efforts had failed and his development of Willmore City was abandoned. A few years later, the Long Beach Land and Water Company acquired the land and began promoting the area as a seaside resort, and renamed it Long Beach.[28] The City of Long Beach incorporated in 1888.[29]

In 1902, the Pacific Electric trolley debuted and further contributed to the development of Long Beach as a resort and commercial center. In the years between 1902 and 1910, Long Beach was the fastest growing city in the United States. In 1911, the Port of Long Beach was established. In 1921, oil was discovered on nearby Signal Hill and contributed to a million-dollar-per-month construction boom in downtown Long Beach. The development of the Long Beach harbor continued with the construction of the U.S. Naval base in 1941.[30] During the past century, Long Beach has grown to become the fifth largest city in the State of California with a population of 481,000.[31]

Due to the development of Long Beach in the early part of the 20th century, a group of doctors saw the need for a hospital in their community as a result of population increase. In 1907, the physicians group established Seaside Hospital in a rented 13-room Victorian at Junipero Avenue and Broadway Avenue. In 1911, construction of a new building to house Seaside Hospital began. The new two-story hospital was located on 14th Street and Magnolia Avenue. The building was later expanded in 1919, 1924, and 1933. These early hospitals were located approximately 4.0 miles and 2.5 miles south of the present location of the LBMMC campus (Campus). Construction for the LBMMC began in 1958, and the main building was completed in 1960. Over the next few years, several other major buildings were added to the complex: Memorial Rehabilitation Hospital (1964), Memorial Miller Children's Hospital (1970), and Memorial Women's Hospital (1976).[32] Today, the LBMMC plays a key role in the community.

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[26] Rancho Los Cerritos Historic Site. 12 October 2004. "History." (Web site.) Available at: http://www.rancholoscerritos.org/history.html

[27] D.E. Kyle (ed.). 2002. *Historic Spots in California, Fifth Edition*. Stanford, CA: Stanford University Press. Pp. 156.

[28] G.S. Dumke. 1944. *The Boom of the Eighties in Southern California*. San Marino, CA: Huntington Library. Pp. 70–71.

[29] City of Long Beach. 12 October 2004. *The History of Long Beach*. Available at: http://cms.longbeach.gov/aboutlb/timeline.htm

[30] City of Long Beach. 12 October 2004. *The History of Long Beach*. Available at: http://cms.longbeach.gov/aboutlb/timeline.htm

[31] City of Long Beach. 18 October 2004. *The Story of the City of Long Beach: Long Beach in the Twenty-First Century*. Available at: http://www.ci.long-beach.ca.us/news/displaynews.asp?NewsID=313

[32] M.C. Todd. 1997. *Ninety Years of Healing: The Story of Long Beach Memorial Medical Center, 1907–1996*. Culver City, CA: PH Printing.

The results of the records search conducted at the SCCIC indicated that historic resources within the Campus have not been recorded. The results of this inquiry also indicated that there are no historic resources within the proposed project site currently listed on the California State Historic Resources Inventory,[33] the NRHP,[34] the listing of California Historic Landmarks,[35] or the California Points of Historic Interest[36] within 0.25 mile of the proposed project boundary.

The City of Long Beach Web site[37] was consulted on September 24, 2004, regarding historic properties that may be within 0.25 mile of the proposed project. The results of this inquiry indicated that the City of Long Beach Sunrise Boulevard Historic District (Sunrise) is located within 0.125 miles southeast of the proposed project area. The district is generally bounded by Willow Street to the north, the City of Long Beach/City of Signal Hill Corporate Boundary to the east, the Southern Pacific Railroad right-of-way to the south, and Atlantic Avenue to the west. This district consists mostly of single-family Craftsman-style bungalows constructed between 1908 and1924. Their structures range in size from large multilevel structures to modest single-story homes. The El Cortez motor court (ca. 1920s) is also located within the district.

A survey of Sunrise was also completed on October 8, 2004. This survey was conducted to determine any impacts to the known historic district that is located in the vicinity of the proposed project.

The results of the survey indicated that Sunrise is located one block east and south of the southeast corner of the proposed project area. The area between the proposed project area and Sunrise is characterized by a commercial district along Atlantic Avenue and along Willow Street. There are numerous utility poles, street signs, trees, and two-story buildings in the area. The survey determined that the LBMMC cannot be seen from street level within Sunrise.

The Assessor[38] was checked on October 11, 2004, to ascertain the number of potentially historic resources that are within the proposed project area. The results of this investigation indicated that there are a total of 11 historic resources within the proposed project area; 8 of these resources are over the 50-year threshold, and 3 are between 44 and 48 years old.

On October 8 and 14, 2004, Sapphos Environmental, Inc. staff, Ms. Laurie A. Solis and Ms. Caprice D. (Kip) Harper, conducted an historic resource architectural survey of the proposed project area. This survey was conducted to determine if any historic resources are located within the Campus.

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[33] Office of Historic Preservation. 2004. *California State Historic Resources Inventory*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[34] National Park Service. 2004. *National Register of Historic Places*. Contact: National Register of Historic Places, National Park Service, 1201 Eye Street, NW, 8th Floor (MS 2280), Washington, DC 20005.

[35] Office of Historic Preservation. 2004. *California Historic Landmarks*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[36] Office of Historic Preservation. 2004. *California Points of Historical Interest*. Contact: Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001.

[37] City of Long Beach. 12 October 2004. "Historic Districts." (Web site.) Available at: http://www.longbeach.gov/plan/pb/hpd/hd.asp

[38] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

Nine potentially historic structures were observed during this survey and were identified as 2701 Atlantic Avenue, 501 East 27th Street, 2666 Elm Avenue, 2679 Elm Avenue, 2685 Elm Avenue, 2690 Elm Avenue, 2622–2624 Linden Avenue, 2633 Linden Avenue, and 2624 Pasadena Avenue (Appendix D, *Cultural Background Information*). The buildings at 2666 Elm Avenue and 2690 Elm Avenue may be eligible for the NRHP (Figure 3.3.2-2, *Potential NRHP Eligible Buildings)*. Seven of the identified buildings were not found to be significant. Records from the Assessor indicated that there were two additional buildings, 300 East Spring Street and 2608 Pasadena Avenue, that are more than 50 years old; however, the buildings were not observed during either survey, and the parcels were vacant.

Potentially Eligible

- 2666 Elm Avenue The resource is a single-story rectangular Victorian house with a hipped roof; it was built in 1909.[39] The building is clad in horizontal wood siding and has a wood shingle roof. The primary entrance is on the west facade and has a small front-gabled porch. A wooden sign hangs over the door that says "Bergendahl." The primary facade is characterized by two wood-framed fixed windows on the north end and a bay window with three metal-framed windows (one sliding and two fixed) on the south end. A brick veneer covers the bottom third of the primary facade. The south facade has five windows that appear to be wood framed. The north facade has four windows—all of which have been replaced by metal-framed windows. This resource appears to be in fair condition and may be eligible for the NRHP. The construction of the resource may meet Criterion C, as it may possess distinctive characteristics of a type, period, or method of construction, or represent the work of a master. Further analysis is warranted to make this determination[40] (Figure 3.3.2-3, *2666 and 2690 Elm Avenue*).

- 2690 Elm Avenue The resource is a single-story Craftsman bungalow with a front-gabled roof; it was built ca. 1905–1930.[41] The building is clad in horizontal wood siding and has composition shingle roof. The primary entrance is on the west facade and is characterized by a front-gabled porch with square columns. The front door is in the center of the west facade and one large, fixed, multipane window is on either side of the front door. The front door appears to be original to the house and is characterized by detailed geometric woodwork. The north facade has several wood-framed double-hung windows and a side entrance with two fixed 12-pane wood-framed windows, and one 18-pane glass and wood door. The east facade has a metal-screened porch that appears to be an addition to the house. This house appears to be in good condition and may be eligible for the NRHP under Criterion C, as it may possess distinctive characteristics of a type, period, or method of construction, or represent the work of a master (Figure 3.3.2-3).[42]

[39] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[40] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2666 Elm Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[41] V. McAlester and L. McAlester. 2002. *A Field Guide to American Houses*. New York, NY: Alfred A. Knopf, Inc.

[42] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2666 Elm Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

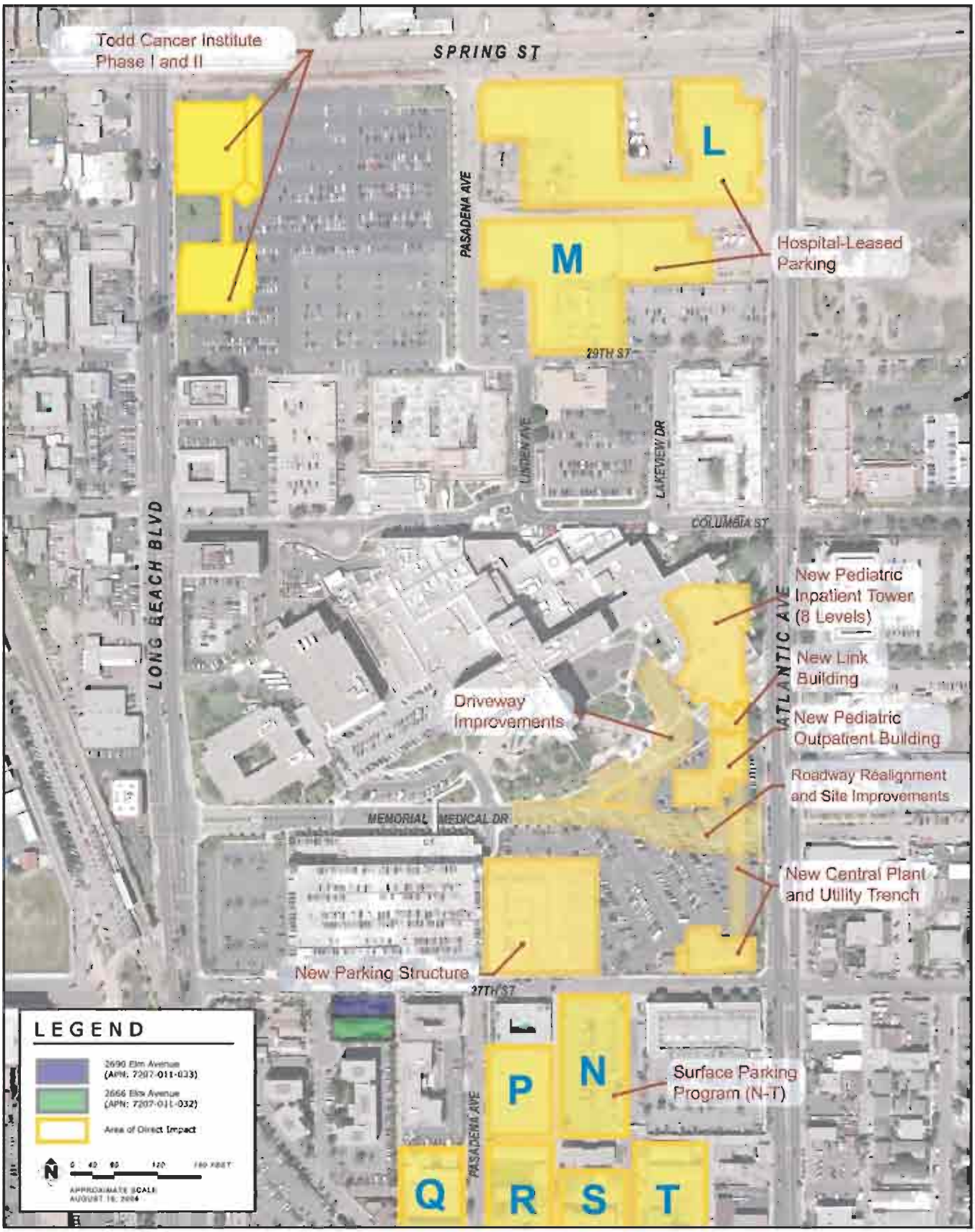

FIGURE 3.3.2-2
Potential NRHP Eligible Buildings

PHOTO 1
Photograph of 2666 Elm Avenue

PHOTO 2
Photograph of 2690 Elm Avenue

FIGURE 3.3.2-3
2666 and 2690 Elm Avenue

Not Eligible for the NRHP

- 2701 Atlantic Avenue The resource is a single-story, ranch-style building that currently houses the Memorial OB/GYN Clinic; it was built in 1959.[43] The building is situated in the southeast corner of the Campus. This resource currently does not meet the 50-year threshold for evaluation for the NRHP, and therefore, must be considered under Criteria Consideration G. This resource is not of "exceptional importance" or "a contributing part of a National Register eligible district." Therefore, it is not eligible for the NRHP under Criteria Consideration G.[44]

- 501 East 27th Street The resource consists of two L-shaped, two-story apartment buildings constructed in 1960.[45] The two buildings form a rectangular mass with an open courtyard in the center; the building is oriented to the south. This resource currently does not meet the 50-year threshold for evaluation for the NRHP and, therefore, must be considered under Criteria Consideration G. This resource is not of "exceptional importance" or "a contributing part of a National Register eligible district." Therefore, it is not eligible for the NRHP under Criteria Consideration G.[46]

- 2679 Elm Avenue The resource is a single-story house that is currently being used as a medical office for the children's clinic portion of the LBMMC. According to the Assessor, the building was constructed in 1941;[47] however, the building has the characteristics of a Craftsman-style bungalow, typically constructed between 1905 and 1930.[48] Although this house is in fair condition, it is not eligible for the NRHP under any of the significance criteria. Under Criterion A, the resource is not associated with any events that have made a significant contribution to the broad patterns of history. Under Criterion B, the resource is not associated with the lives of any significant persons, or likely to yield information important to history (Criterion D). In addition, this resource does not have distinctive characteristics of a type, period, or method of construction, or represent the work of a master (Criterion C).[49]

- 2685 Elm Avenue The resource is a single-story Craftsman bungalow that is currently being used as a medical office for the pediatric infectious diseases portion of the Miller Children's Hospital. It was constructed between 1922 and 1928.[50] Although this house

[43] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[44] C.D. Harper. 8 October 2004. *Department of Parks and Recreation 523 Primary Record for 2701 Atlantic Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[45] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[46] C.D. Harper. 8 October 2004. *Department of Parks and Recreation 523 Primary Record for 501 East 27th Street*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[47] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[48] V. McAlester and L. McAlester. 2002. *A Field Guide to American Houses*. New York, NY: Alfred A. Knopf, Inc.

[49] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2679 Elm Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[50] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

is in fair condition, it is not eligible for the NRHP under any of the significance criteria. Under Criterion A, the resource is not associated with any events that have made a significant contribution to the broad patterns of history. Under Criterion B, the resource is not associated with the lives of any significant persons, or likely to yield information important to history (Criterion D). In addition, this resource does not have distinctive characteristics of a type, period, or method of construction, or represent the work of a master (Criterion C).[51]

- 2622–2624 Linden Avenue The resource is a one-story rectangular apartment building (duplex) with a hipped roof; it was constructed in 1956.[52] The building is in fair condition. This resource currently does not meet the 50-year threshold for evaluation for the NRHP and, therefore, must be considered under Criteria Consideration G. This resource is not of "exceptional importance" or "a contributing part of a National Register eligible district." Therefore, it is not eligible for the NRHP under Criteria Consideration G.[53]

- 2633 Linden Avenue The resource consists of two single-family houses located on the parcel. The front house is a single-story house constructed in 1948.[54] The rear house is also one-story; it was constructed in 1955.[55] Although the two houses are in fair condition, they are not eligible for the NRHP under any of the significance criteria. Under Criterion A, the resource is not associated with any events that have made a significant contribution to the broad patterns of history. Under Criterion B, the resource is not associated with the lives of any significant persons, or likely to yield information important to history (Criterion D). In addition, this resource does not have distinctive characteristics of a type, period, or method of construction, or represent the work of a master (Criterion C).[56]

- 2624 Pasadena Avenue The resource is a single-story Craftsman bungalow with a front-gabled roof; it was constructed between 1920 and 1922.[57] Although this house is in fair condition, it is not eligible for the NRHP under any of the significance criteria. Under Criterion A, the resource is not associated with any events that have made a significant contribution to the broad patterns of history. Under Criterion B, the resource is not associated with the lives of any significant persons, or likely to yield information

[51] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2685 Elm Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[52] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[53] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2622–2624 Linden Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[54] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[55] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

[56] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2633 Linden Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[57] County of Los Angeles, Office of the Assessor's. 11 October 2004. Online Parcel Viewer. Available at: http://assessormap.co.la.ca.us/mapping/viewer.asp

important to history (Criterion D). In addition, this resource does not have distinctive characteristics of a type, period, or method of construction, or represent the work of a master (Criterion C).[58]

Demolished Buildings/Vacant Parcels

- 300 East Spring Street According to the Assessor, there is a commercial/industrial building that was constructed in 1922 at this address. However, the building was not observed during the survey and this parcel is part of a paved parking that is located southeast of the intersection of Spring Street and Long Beach Boulevard.

- 2608 Pasadena Avenue According to the Assessor, there is a multiple-family building that was constructed between 1915 and 1921 at this address. However, the building was not observed during the survey and this parcel is now a dirt lot.

Native American Coordination

Sapphos Environmental, Inc. coordinated with the NAHC to ascertain the presence of Native American cultural resources or known sacred sites. A response from the NAHC was received on July 7, 2004, and recommended the contacting of Native American individuals and organizations that may have further knowledge on the presence of these resources within the proposed project area.[59] Sapphos Environmental, Inc. sent letters describing the proposed project to the 11 Native American individuals and organizations on September 28, 2004. Mr. Anthony Morales of the Gabrielino/Tongva Tribal Council expressed concerns regarding the Native American sensitivity of the area due to previous identification of the archaeological site of Puvungna within 0.25-mile radius of the proposed project area and the presence of other ethnographically recorded villages in the area.[60,61]

Human Remains

A record search was conducted at the SCCIC to determine the presence of human remains within the proposed project area. The search included a review of all recorded historic sites within a 0.25-mile radius of the proposed project area, as well as a review of all relevant cultural resource and survey reports. In addition, a review of the USGS 7.5-minute series Long Beach topographic quadrangle was completed, which included a visual search for both the small and large cemetery icons.[62] A street map check indicated that there are two cemeteries within the vicinity of the Campus. The nearest formal cemeteries are Veterans Memorial Park, located 0.125 mile west of the proposed project area, and Sunnyside Cemetery, located approximately 0.125 mile to the east of the proposed project area. This

[58] C.D. Harper. 14 October 2004. *Department of Parks and Recreation 523 Primary Record for 2624 Pasadena Avenue*. Contact: South Central Coastal Information Center, 800 North State College Boulevard, Fullerton, CA 92834-6846.

[59] Rob Wood, Native American Heritage Commission. 7 July 2004. (Letter to Ms. Laurie Solis, Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.) Subject: Native American Sacred Sites Record Check.

[60] Anthony Morales, *Personal Communication*, 5 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[61] Anthony Morales, *Personal Communication*, 21 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[62] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

review determined that there are no current or formal former cemeteries located within the boundaries of the proposed project area. However, Mr. Anthony Morales of the Gabrielino/Tongva Tribal Council expressed concerns regarding the Native American sensitivity of the area due to previous identification of the archaeological site of Puvungna within 0.25-mile radius of the proposed project area and the presence of other ethnographically recorded villages in the area.[63,64]

3.3.3 Significance Threshold

The potential for the proposed project to result in impacts related to cultural resources was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

The proposed project would normally be considered to have a significant impact to cultural resources when the potential for any one of the following four thresholds occurs:

- Requires ground-disturbing activities in a geologic unit known to have a moderate-to-high probability to contain unique paleontological resources

- Causes a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines, which would include direct impacts (e.g., great disturbance, increased exposure to water, etc.) or indirect impacts (e.g., increased exposure to vandalism by increasing site accessibility)

- Causes a substantial adverse change in the significance of an historical resource as defined in Section 15064.5 of the State CEQA Guidelines; specifically, a substantial adverse change is any change that is inconsistent with:

    - *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*[65]

    - *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings*[66]

- Causes excavations in areas known or expected to have a moderate-to-high probability of containing human remains

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[63] Anthony Morales, *Personal Communication*, 5 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[64] Anthony Morales, *Personal Communication*, 21 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[65] Kay D. Weeks and Anne E. Grimmer. 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Washington, DC: U.S. Department of the Interior, Cultural Resource Stewardship and Partnerships.

[66] Kay D. Weeks and Anne E. Grimmer. 1997. *The Secretary of the Interior's Standards for the Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings*. Washington, DC: U.S. Department of the Interior, Cultural Resource Stewardship and Partnerships.

3.3.4 Impact Analysis

Paleontological Resources

The results of the paleontological record search indicated that there is a potential for paleontological resources to occur within the proposed project site. The results of the geology and soils investigation for the proposed project indicated that the majority of the proposed project site is within an area of native Quaternary Upper Pliocene marine soil (Qpu). The remaining portion of the proposed project area is a former ravine composed of Quaternary Alluvium (Qal) that has subsequently been filled with unclassified fill material (Appendix E, *Geology and Soils*). Because portions of the proposed project area are within a geological formation that is known to be of fossiliferous potential and because the majority of the ground-disturbing activities would be within native soils, the potential impact to paleontological resources rates an acknowledged paleontological sensitivity rating of "high."

Implementation of the proposed project has the potential to result in significant impacts to cultural resources related to ground-disturbing activities in a geologic unit known to have a moderate-to-high probability to contain unique paleontological resources, therefore requiring the consideration of mitigation measures.

Archaeological Resources

The results of the records search indicated the presence of an archaeological site within a 0.25-mile radius of the proposed project site. In addition, the expressed concern by Mr. Anthony Morales of the Gabrielino/Tongva Tribal Council as a result of tribal coordination, the proximity of the village of Puvungna, and because the majority of the ground-disturbing activities would be within native soils, the potential impact to archaeological resources rates an acknowledged archaeological sensitivity rating of "high."

Implementation of the proposed project would have the potential to result in significant impacts to cultural resources related to a substantial adverse change in the significance of an archaeological resource, therefore requiring the consideration of mitigation measures.

Historic Resources

The proposed project would not result in impacts to cultural resources related to a substantial adverse change in the significance of a historical resource. No historic resources were identified by the record search. The results of the field survey indicated that two of the buildings surveyed within the Campus have reached the 50-year threshold and are located outside the limits of demolition and construction for the proposed project elements. The results of the Phase I architectural survey indicated that these two historic buildings may be eligible for the NRHP and warrant further analysis. They are located at 2666 Elm Avenue and 2690 Elm Avenue. The structure located at 2666 Elm Avenue is a single-story rectangular Victorian house with a hipped roof; it was built in 1909. The structure located at 2690 Elm Avenue is a single-story Craftsman bungalow with a front-gabled roof; it was built ca. 1905–1930.

Implementation of the proposed project would not have the potential to result in significant impacts to cultural resources related to a substantial adverse change in the significance of a historic resource; therefore, no mitigation measures are required.

Human Remains

The proposed project is not expected to disturb any human remains, including those interred outside of formal cemeteries. The results of the record search did not identify any human remains within the proposed project area. In addition, a review of the USGS 7.5-minute series Long Beach topographic quadrangle was completed, which confirmed the absence of the small and large cemetery icons in the proposed project area.[67] However, whenever deep soil excavations are undertaken, there is the potential to encounter human remains, thus requiring the consideration of mitigation to address the unanticipated discovery of human remains during construction. The Gabrielino/Tongva Tribal Council has expressed concerns regarding the Native American sensitivity of the area due to previous identification of an archaeological site within a 0.25-mile radius, the proposed project's proximity to the archaeological site of Puvungna, and ethnographic knowledge of other villages in the area.[68,69] Therefore, the proposed project may result in the unanticipated discovery of human remains buried outside of formal cemeteries or Native American sacred sites.

3.3.5 Cumulative Impacts

The proposed project would not result in significant cumulative impacts to cultural resources. There are 43 related projects (Section 2, Project Description, Table 2.6-1, *List of Related Projects*) that have been identified as a result of scoping, public comments, and coordination with the County Department of Regional Planning and the City of Long Beach. Because the cultural resources impacts expected from the implementation of the proposed project do not affect lands outside the boundaries of the proposed project site, these impacts do not create any cumulative impacts on the environment outside of the proposed project boundaries.

3.3.6 Mitigation Measures

Measure Cultural-1

The potential impact to cultural resources related directly or indirectly to the destruction of a unique paleontological resource or unique geologic feature from the proposed project shall be reduced to below the level of significance by the presence of a qualified paleontological monitor during all ground-disturbing activities. Any paleontological discoveries shall be removed in accordance with standards for such recovery established by the Society of Vertebrate Paleontology:

Where the qualified vertebrate paleontologist identifies the potential for the grading plan to result in impacts to sites recorded to contain unique paleontological resources or sediments with a medium or high potential to contain significant paleontological resources, a program for recovery of the resources shall be required. This program must include, but not be limited to, the following:

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[67] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

[68] Anthony Morales, *Personal Communication*, 5 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[69] Anthony Morales, *Personal Communication*, 21 October 2004. Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

- Monitoring of excavation in areas likely to contain paleontologic resources by a qualified vertebrate paleontologic monitor. The monitor shall be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil vertebrates.

- Preparation of recovered specimens to a point of identification, including washing of sediments to recover small fossil vertebrates.

- Identification and curation of specimens into a museum repository with retrievable storage.

- Preparation of a report of findings with an appended, itemized inventory of the specimens. The report and inventory, when submitted to the appropriate lead agency, signifies the completion of the program to mitigate impacts to paleontologic resources.

Measure Cultural-2

The impact to cultural resources related directly or indirectly to the destruction of a unique archaeological resource from the proposed project shall be reduced to below the level of significance by the presence of a qualified archaeological monitor during all ground-disturbing activities within native soils identified as Qal. The City of Long Beach shall ensure that impacts to cultural resources as a result of the potential for earthmoving activity to uncover previously unrecorded archeological resources is below the level of significance through monitoring by a qualified archaeologist of all subsurface operations undertaken in native soils identified as Qal, including but not limited to grading, excavation, trenching, and recording of any previously unrecorded archeological resources encountered during construction. The plans and specifications for all ground-disturbing activities shall identify the need for archeological monitoring and data recovery. The archaeologist shall be on site during any activity when soil is to be moved or exported. The archaeologist shall be authorized to halt the proposed project in the area of a finding, and mark, collect, and evaluate any archaeological materials discovered during construction. In addition, an exploratory archaeological excavation shall be made (i.e., a sample test pit) to assess the presence of cultural resources.

In the event that archaeological resources are encountered by the monitoring archaeologist, the archaeologist shall contact the Gabrielino/Tongva Tribal Council and arrange for a Native American monitor to be present on site during the remainder of excavation activities related to the proposed project.

Copies of any archaeological surveys, studies, or reports of field observation during grading and land modification shall be prepared and certified by the attendant archaeologist and submitted to the South Central Coastal Information Center at California State University Fullerton. Any artifacts recovered during mitigation shall be deposited in an accredited and permanent scientific or educational institution for the benefit of current and future generations.

Measure Cultural-3

The City of Long Beach shall ensure that impacts to cultural resources related to the unanticipated discovery of human remains be reduced to below the level of significance by ensuring that, in the event human remains are encountered, construction in the area of finding shall cease and the remains shall stay in-situ pending definition of an appropriate plan. The Los Angeles County Coroner (Coroner) shall be contacted to determine whether investigation of the cause of death is required. In the event

that the remains are of Native American origin, the Native American Heritage Commission shall be contacted to determine necessary procedures for protection and preservation of remains, including reburial, as provided in the State CEQA Guidelines, Section 15064.5(e), "CEQA and Archaeological Resources," CEQA Technical Advisory Series.[70]

In the event of accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken:

There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The Coroner must be contacted to determine that no investigation of the cause of death is required, and

(B) If the Coroner determines the remains to be Native American:

1. The Coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

4. Where the following conditions occur, the landowner of his/her authorized representative shall rebury the Native American human remains and associated grave goods, with appropriate dignity, in the property in a location not subject to further subsurface disturbance:

(a) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(b) The descendant in identified fails to make a recommendation.

(c) The landowner or his/her authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

[70] California Resources Agency. 16 September 2004. California Environmental Quality Act, Article 5, §15064.5(e): "Determining the Significance of Impacts to Archeological and Historical Resources." Available at: http://ceres.ca.gov/topic/env_law/ceqa/guidelines/art5.html

3.3.7 Level of Significance after Mitigation

Implementation of mitigation measure Cultural-1 would reduce potential impacts related to paleontological resources to below the level of significance. Implementation of mitigation measure Cultural-2 would reduce potential impacts related to archaeological resources to below the level of significance. There are no anticipated significant impacts to historic resources; therefore, no mitigation measures are required. Implementation of mitigation measure Cultural-3 would reduce potential impacts related to human remains to below the level of significance.

3.4 GEOLOGY AND SOILS

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts related to geology and soils. Therefore, this issue is carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts related to geology and soils and to identify potential alternatives.

The analysis of geology and soils includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Geology and soils at the proposed project site were evaluated in accordance with the methodologies and information provided by the City of Long Beach General Plan,[2,3] the Environmental Summary Report for the Long Beach Memorial Medical Center Expansion Area,[4] the geology and soils report prepared by SCS Engineers (Appendix E, *Geology and Soils*), publications of the California Geological Survey (CGS; formerly known as California Division of Mines and Geology, CDMG), and published maps.[5,6]

3.4.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies that relate to geology and soils that must be considered by the City of Long Beach during the decision-making process for proposed project elements that involve grading (excavation or fill), modification of existing structures, or construction of new structures.

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[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach, Department of Planning and Building. October 1988. *Seismic Safety Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[4] SCS Engineers. May 2004. *Environmental Summary Report, Long Beach Memorial Medical Center Expansion Area, Long Beach, California*. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

[5] California Department of Conservation, Division of Mines and Geology. 1986. *Special Studies Zones Map, Long Beach Quadrangle*. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[6] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

State

California Geological Survey

The CGS identifies several earth resource issues that should be taken into consideration when evaluating whether the proposed project would likely be subject to geologic hazards, particularly hazards related to earthquake damage. These considerations include both the potential for existing geologic and soil conditions to pose a risk to the proposed project and the potential for the proposed project to result in an impact to the existing geologic and soil conditions by creating or exacerbating a geologic hazard.

The CGS conducts studies related to geologic hazards (e.g., faulting, liquefaction, seismically induced landslides, and ground shaking) as they affect people and structures. These studies relate to the Alquist-Priolo Earthquake Fault Zone (APEFZ) Act[7] and Seismic Hazards Mapping Act.[8] The CGS also issues guidelines for the evaluation of geologic and seismic factors that may impact a project or that a project may affect:

- CDMG Special Publication No. 42, Fault-Rupture Hazard Zones in California[9]
- CDMG Special Publication No. 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California[10]
- CDMG Special Publication No. 99, Planning Scenario for a Major Earthquake on the Newport-Inglewood Fault Zone (Los Angeles and Orange Counties, California)[11]
- CDMG Open File Report 88-14, Recently Active Traces of the Newport-Inglewood Fault Zone, Los Angeles and Orange Counties, California[12]

Each set of guidelines provides checklists and outlines to help ensure a comprehensive report of geologic/seismic conditions. Although not mandatory, these guidelines characterize the standards for technical and procedural adequacy in the characterization of geology, soils, and related environmental hazards.

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[7] State of California. 1972. Alquist-Priolo Earthquake Fault Zoning Act. California Public Resources Code, Section 2621 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

[8] State of California. 1990. Seismic Hazards Mapping Act. California Public Resources Code. Section 2690 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

[9] California Department of Conservation, Division of Mines and Geology. Revised 1997 (Supplements 1 and 2 added 1999). *Fault-Rupture Hazard Zones in California*. Special Publication No. 42. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[10] California Department of Conservation, Division of Mines and Geology. 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. Special Publication No. 117. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[11] California Department of Conservation, Division of Mines and Geology. 1988. *Planning Scenario for a Major Earthquake on the Newport-Inglewood Fault Zone (Los Angeles and Orange Counties, California)*. Special Publication No. 99. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[12] California Department of Conservation, Division of Mines and Geology. 1988. *Recently Active Traces of the Newport-Inglewood Fault Zone, Los Angeles and Orange Counties, California*. Open File Report 88-14. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531

Alquist-Priolo Earthquake Fault Zone Act of 1972

The CGS has delineated earthquake fault zones along known active or potentially active faults in California pursuant to the APEFZ Act of 1972.[13] The State of California delegates the authority to local government to regulate development within the APEFZ. Construction of habitable structures is not permitted over potential rupture zones. The closest APEFZ, established for the active Cherry Hill fault of the Newport-Inglewood Fault Zone, is located approximately 1,000 feet northeast of the proposed project site. Based on the available geologic data, active or potentially active faults with the potential for surface fault rupture are not known to be located directly beneath or projecting toward the proposed project site. Therefore, the potential for surface rupture due to fault plane displacement propagating to the surface at the site during the design life of the proposed project is considered to be low (Appendix E).

Seismic Hazards Mapping Act of 1990

The CGS has also identified seismic hazard zones that are delineated in accordance with the seismic hazards mapping program (SHMP) of the Seismic Hazards Mapping Act of 1990.[14] The Seismic Hazards Mapping Act provides for the following:

> …a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other seismic hazards caused by earthquakes.

The proposed project site is identified on the seismic hazard zone map, Long Beach quadrangle, within a zone of liquefaction potential.[15]

California Building Code

The majority of the State of California, including the proposed project site, lies within Seismic Zone 4, the highest level hazard zone designated by the current Uniform Building Code (UBC). The California Building Standards Code, or California Building Code (CBC), augments and supersedes the UBC with stricter requirements to reduce the risks associated with building in Seismic Zone 4 to the maximum extent practicable. The CBC[16] sets standards for the investigation and mitigation of the site conditions related to fault movement, liquefaction, landslides, differential compaction/seismic settlement, ground rupture, ground shaking, tsunami, seiche, and seismically induced flooding.

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[13] State of California. 1972. Alquist-Priolo Earthquake Fault Zoning Act. California Public Resources Code, Section 2621 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

[14] State of California. 1990. Seismic Hazards Mapping Act. California Public Resources Code. Section 2690 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

[15] California Department of Conservation, Division of Mines and Geology. 1986. *Special Studies Zones Map, Long Beach Quadrangle*. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[16] California Building Standards Commission. 1 November 2002a. California Code of Regulations, Title 24: "California Building Standards Code." Sacramento, CA: California Building Standards Commission. Available at: http://www.bsc.ca.gov

Mitigation of geological (including earthquake) and soil (geotechnical) issues must be undertaken in compliance with the CBC. Within the CBC, there are two subsections: the California Historical Building Code[17] and California Code for Building Conservation.[18] The California Historical Building Code, more commonly known as the State Historical Building Code (SHBC), contains alternative building standards for the renovation of qualified historical buildings or structures. The goal of the SHBC is to maintain currently acceptable life-safety standards for historic buildings and to ensure that implementation of this code is performance based. The California Code for Building Conservation contains amendments to the federal Uniform Code for Building Conservation, which relates to seismic strengthening of unreinforced masonry bearing wall buildings, such as those at the proposed project site.

Seismic retrofit for any hospital buildings would be performed in accordance with CBC. Seismic evaluation procedures for seismic retrofit of hospital buildings are outlined in Part 1, Title 24 of the California Code of Regulations (CCR), Chapter 6.

Senate Bill 1953

The OSHPD is responsible for overseeing all aspects of construction for general acute care, and psychiatric hospitals, as well as multistory skilled nursing homes and intermediate care facilities in California. Senate Bill (SB) 1953 standards ensure patient safety during an earthquake and functioning medical facilities to care for injured people immediately following earthquakes. If a facility is to remain a general acute care hospital facility beyond a specified date, the owner must conduct seismic evaluations and prepare both a comprehensive evaluation report and a compliance plan to attain specified structural and nonstructural performance categories. The plan must be submitted to OSHPD in accordance with these regulations.

Review of design plans and related information for hospital inpatient buildings and related utilities is completed by the Office of Statewide Health Planning and Development (OSHPD). However, OSHPD relies on the local building and safety authority to review design plans and related information for hospital outpatient buildings and related structures for appurtenant commercial uses. When design plans and related information are submitted for review by the OSHPD and the CGS, the data and analysis requirements of the CBC and Chapter 6 must be satisfied before construction approval could be granted.

Local

City of Long Beach

Building and construction within the City of Long Beach are subject to the regulations of the City Municipal Code. Municipal Code Chapter 18.24, Building Codes, adopts and incorporates by reference the CBC (Volumes I and II, 2001 Edition), and includes amendments and modifications to the CBC that are specific to the City of Long Beach. The CBC in turn incorporates provisions of the UBC, which contains seismic design criteria and grading standards.

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[17] California Building Standards Commission. 1 November 2002b. California Code of Regulations, Title 24, Part 8: "California Historical Building Code." Sacramento, CA: California Building Standards Commission. Available at: http://www.bsc.ca.gov

[18] California Building Standards Commission. 1 November 2002a. California Code of Regulations, Title 24: "California Building Standards Code." Sacramento, CA: California Building Standards Commission. Available at: http://www.bsc.ca.gov

The City of Long Beach General Plan adopted the Seismic Safety element of the General Plan on October 1988. The purpose of this element is to provide a comprehensive analysis of seismic factors in order to reduce the loss of life, injuries, damage to property, and social and economic impacts resulting from future earthquakes. The Seismic Safety element is a seismic safety planning tool and contains goals and recommendations that provide guidance for development in seismically active areas. To achieve maximum feasible safety from seismic risk, the Seismic Safety element focuses on current developmental policies and the allocation of future land uses.

Building Codes

The County has adopted and amended the CBC to reflect local geologic and seismic conditions. The County of Los Angeles Building Code[19] would be the standard for evaluating the adequacy of geotechnical and engineering geology studies needed for design and construction in the County. The proposed project would be subject to the provisions of both the CBC and the County of Los Angeles Building Code. The County of Los Angeles Building Code, Chapter 96, identifies collapse prevention performance recommendations to be used in the evaluation of feasibility of conservation for historic structures consistent with the guidelines provided by the SHBC, the Uniform Code for Building Conservation, and The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.[20]

3.4.2 Existing Conditions

The existing conditions for geology and soils at the Long Beach Memorial Medical Center campus (Campus) are described in relation to surficial geologic units, bedrock formations, artificial fill, faulting, seismicity, soils, and groundwater hydrology.

Surficial Geologic Units

Surficial geologic materials in the area consist of Pleistocene and Recent nonmarine and marine units, predominantly sand, silty sand, sandy silt, silt, and clay. Undisturbed soil at the proposed project site is not considered to be significantly erodable. In addition to native materials and engineered fill placed in connection with construction activities, an unknown volume of unclassified fill, including gravel, debris, and waste oil field material, was used to bring a former on-site ravine up to grade prior to using the site for hospital facilities. Native and fill soils were encountered in borings drilled during subsurface site investigations. There are no unique geological features at the proposed project site.[21]

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[19] County of Los Angeles, Department of Public Works. 1 November 2002. Building Code, Title 26: "County of Los Angeles Building Code." Available at: http://www.bpcnet.com/cgi-bin/hilite.pl/codes/lacounty/maintoc.htm

[20] Weeks, Kay D. and Anne E. Grimmer. 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Washington, DC: U.S. Department of the Interior, Cultural Resource Stewardship and Partnerships.

[21] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

Bedrock Formations

Geologically, the proposed project area is located in the southwestern portion of the Los Angeles Basin (Basin). The Basin formed when basement (older) rocks were structurally downwarped, allowing a thick sequence of Upper Cretaceous through Recent age (approximately 100 million years ago to present) sedimentary units to form. The sedimentary basin fill in the proposed project area is estimated to be 12,000 feet thick.[22] The basin fill in this area consists predominantly of marine origin sandstone, siltstone, and shale of Middle Miocene to Pliocene age (approximately 16 to 1.8 million years ago) overlain by predominantly marine sand and silt of Pleistocene to Recent age (approximately 1.8 million years ago to present).[23]

Artificial Fill

Artificial fill is used to provide a foundation material with consistent and measurable qualities that compensate for site-specific geotechnical constraints. Because the proposed project site and vicinity are entirely developed, artificial fill would most likely be the first "unit" encountered during excavation. Artificial fill may partially or wholly replace native soils or alluvial deposits, depending on the extent of use during original placement. There is also unclassified fill, located in a former ravine that was historically filled using petroleum-containing soil and miscellaneous oil field and other debris (see Section 3.5, Hazards and Hazardous Materials). As discussed in Section 3.5 of this EIR, soil with field indications of potential contamination encountered during project earthwork will be tested and removed if found to be contaminated or otherwise unsuitable.

Faulting

Faults are fractures, or lines of weakness, in the earth's crust along which earthquakes occur. An earthquake occurs when rock units on one side of a fault are suddenly offset relative to the same rock units on the other side of the fault. In cases where earthquakes are large enough, or shallow enough, surface rupture can occur along the fault plane where it intersects the earth's surface. Active faults, those exhibiting movement during the Holocene age, and potentially active faults, those exhibiting movement during the Pleistocene age (between 1.8 million and 11,000 years ago), must be considered as potential sources for surface rupture where they intersect the surface. In general, the more recently there has been movement on a fault, the higher the potential for future movement on that fault.

The rocks of the Basin are cut by numerous faults, many of which are strike-slip faults of generally northwest-southeast orientation. Of these, the Newport-Inglewood Fault Zone is located closest to the proposed project site, within approximately 1,000 feet northeast. The Newport-Inglewood Fault Zone extends from the Baldwin Hills to Newport Bay and is considered to be active[24] (Figure 3.4.2-1, *Map of Active Faults, Los Angeles Basin*).

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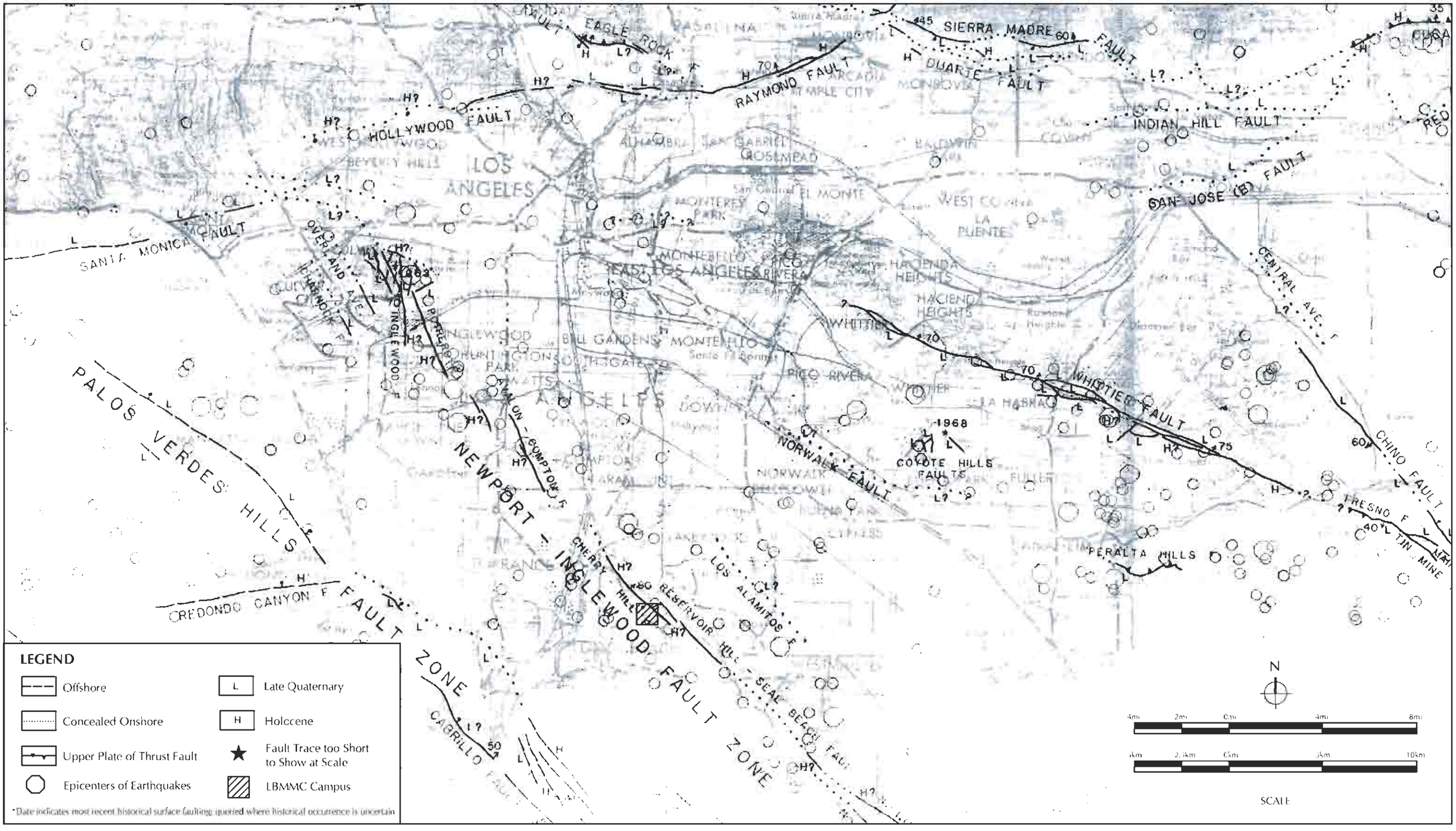
[22] R.F. Yerkes, T. H. McCullog, J.E. Shoellhamer, and J.G. Vedder. 1965. *Geology of the Los Angeles Basin, California: An Introduction.* (U.S. Geological Survey Professional Paper 420). Contact: U.S. Geological Survey, USGS National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

[23] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

[24] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.



LEGEND

- Offshore
- Concealed Onshore
- Upper Plate of Thrust Fault
- Epicenters of Earthquakes
- L — Late Quaternary
- H — Holocene
- Fault Trace too Short to Show at Scale
- LBMMC Campus

*Date indicates most recent historical surface faulting; queried where historical occurrence is uncertain

FIGURE 3.4.2-1
Map of Active Faults, Los Angeles Basin

Research has also indicated that several blind thrust faults (low-angle faults that do not break the surface) are active or potentially active and could cause significant ground shaking. Some recent research also indicates that the Compton-Los Alamitos Blind Thrust, which may be located in the deep subsurface under the proposed project site, may or may not be active or potentially active (Appendix E).

Seismicity

Plate tectonics, the movement of plates within the earth's crust, is experienced as an earthquake when there is a sudden release of energy along a fault line. The fault ruptures to accommodate this energy, propagating the energy throughout the land area surrounding the epicenter. Depending on the intensity of the earthquake, the propagation of energy creates strong ground motion and other potential seismic hazards such as surface fault rupture, ground failure (including liquefaction), and landslides.

The Richter magnitude scale was developed as a mathematical device to compare the size of earthquakes but not the measurement of damage. Richter showed that the greater the energy, the greater the amplitude of ground motion at a given distance. Because the Richter scale is based on a logarithmic scale, or base-10 scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude, or height, of the earthquake wave. As an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 32 times more energy than the amount associated with the preceding whole number value.

Seismologists have more recently developed a standard magnitude scale that addresses some of the limitations of earlier scales. This is called Moment magnitude. The Moment magnitude gives a more reliable estimate of energy release, particularly for very large earthquakes. The Moment scale is computed based on information gathered on seismographs. Seismographs are machines that measure and record vibrations within the earth and on the ground.

Ground motion or ground-shaking intensity is described by the modified Mercalli intensity scale (Table 3.4.2-1, *Modified Mercalli Intensity Scale*). Values in the modified Mercalli intensity scale are dependent on several factors: earthquake size, type, depth, distance to fault, subsurface geologic conditions, and direction of motion.

Another measure of the potential for seismic-related damage is the peak horizontal ground acceleration (PHGA). PHGA is a measure of ground motion expressed as a percentage of gravity (g) as it reflects the amplitude of an earthquake wave relative to earth's surface. The greater the ground acceleration, the more damage a seismic event is likely to cause.

TABLE 3.4.2-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity	Description of Potential Effects
I.	Not felt. Marginal and long-period effects of large earthquakes.*
II.	Felt by persons at rest, on upper floors, or favorably placed.
III.	Felt indoors. Hanging objects swing. Vibration-like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.	Hanging objects swing. Vibration-like passing of heavy trucks, or sensation of a jolt like a ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frames creak.
V.	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken; knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D* cracked. Small bells ring (church, school). Trees, bushes shaken (visible, or heard to rustle).
VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII.	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX.	General panic. Masonry D destroyed; masonry B seriously damaged. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas, sand and mud ejected; earthquake fountains; and sand craters.
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks to canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI.	Rails bent greatly. Underground pipelines completely out of service.
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

NOTES:

*Wave period is the time calculated between two consecutive wave peaks.

*The quality of masonry, brick, or other material is defined by the following lettering system, which is unrelated to the conventional construction classes A, B, and C:

Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B. Good workmanship and mortar; reinforced, but not designed to resist lateral forces.

Masonry C. Ordinary workmanship and mortar; no extreme weaknesses, like failing to tie in at corners, but neither reinforced nor designed to resist horizontal forces.

Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

SOURCE: Richter, C.F. 1957. *Elementary Seismology*. San Francisco, CA: W. H. Freeman Co.

Numerous regional and local faults are capable of producing severe earthquakes, those of Richter magnitude of 6.0 or greater (Table 3.4.2-2, *List of Recorded Earthquakes with Magnitude of Greater than 6.0 within 100 Kilometers of the Proposed Project Site*). Several earthquakes have occurred in historic time in the general Southern California region. Historic events are both preinstrumental (all information is very approximate) and instrumental events. The primary earthquake associated with the Newport-Inglewood Fault Zone is the year 1933 magnitude 6.3 event. Table 3.4.2-2 summarizes data for recorded moderate to severe earthquakes within the area of potential effect for the proposed project site.

TABLE 3.4.2-2
LIST OF RECORDED EARTHQUAKES WITH MAGNITUDE OF GREATER THAN 6.0 WITHIN 100 KILOMETERS OF THE PROPOSED PROJECT SITE

Date	Location (latitude, longitude)	Moment Magnitude	Local Magnitude*	Distance from the Proposed Project Site (kilometers)
December 8, 1812	33.70, –117.90	7.5**	6.90**	33
July 22, 1899	34.30, –117.50	—	6.50**	85
May 15, 1910	33.70, –117.40	—	6.00	78
July 23, 1923	34.00, –117.25	—	6.25	92
March 11, 1933	33.62, –117.97	6.4	6.30	33
February 9, 1971	34.41, –118.40	6.6	6.40	66
October 1, 1987	34.06, –118.08	5.9	6.10	29
February 28, 1990	34.21, –118.54	—	6.20	59
January 17, 1994	34.21, –118.54	6.7	6.80***	51

NOTES:
* Moment magnitude is preferred to local or Richter magnitude because it provides a more reliable estimate of the size of an event, particularly for very large earthquakes.
** Estimated
*** Surface-wave magnitude
SOURCE: U.S. Geological Survey. Last modified 10 July 2003. *Earthquake Hazards Program*. Earthquake Search: Circular Area. Web site: http://neic.usgs.gov/neis/epic/epic_circ.html

As indicated above, a portion of the Newport-Inglewood Fault Zone, known as the Cherry Hill segment, is located within approximately 1,000 feet of portions of the proposed project area. The Newport-Inglewood fault is capable of a 7.1 magnitude earthquake.[25] PHGAs were estimated on a design and upper-bound earthquake basis in a recent study,[26] with a 10-percent chance of exceedance during 50- and 100-year time periods, respectively. The design and upper-bound basis PHGAs were estimated at 0.52 g and 0.65 g, respectively.

The proposed project is located in an area that is susceptible to strong ground shaking from severe earthquakes. Earthquakes on faults, such as the nearby Newport-Inglewood Fault (capable of 7.1 magnitude), can generate seismic shaking. There are also a number of other active and potentially active faults within 60 miles (100 kilometers) of the proposed project site, any of which could cause significant ground shaking at the site (Figure 3.4.2-1).

[25] T. Cao, W.A. Bryant, B. Rowshandel, D. Branum, and C.J. Wills. June 2003. *The Revised 2002 California Probabilistic Seismic Hazard Maps*. Contact: California Geological Survey, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[26] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Prepared by: MACTEC, 1105 Sanctuary Parkway, Suite 300, Alpharetta, GA 30004.

Potential seismic forces resulting from an earthquake as they might affect buildings and other structures are often quantified as PHGAs. MACTEC[27] has determined site-specific PHGAs of 0.52 g and 0.65 g using the design basis earthquake with a 10-percent probability of exceedance during a 50-year time period and the upper-bound earthquake with a 10-percent probability of exceedance during a 100-year time period, respectively.[28,29]

Soils

Expansive soils have relatively high clay mineral content and are usually found in areas where underlying formations contain an abundance of clay minerals or where coarse-grained materials are weathered and broken down into clay-rich materials. Although there is some clay in the natural soils in the proposed project area, the soil is primarily silt and silty sand. The foundation investigation indicates that the clay soils are somewhat expansive.[30] Following standard engineering practice, all expansive soil that could potentially negatively affect buildings or other proposed project components would be removed and replaced with properly engineered fill soil prior to building construction.

Groundwater Hydrology

A complex system of alternating aquifers (highly permeable sand and gravel beds) and aquicludes (relatively low permeability sediments with a high proportion of clay and silt) characterizes the Basin subsurface geology, including the proposed project site area. In some parts of the Basin, aquicludes are "leaky," allowing groundwater to move upward or downward through them, depending on differential pressure gradients. Due to this leakage, precipitation, and surface water infiltration, localized shallow perched-water zones may accumulate above the regional groundwater level. Delineating shallow, perched groundwater is critical during the evaluation of liquefaction potential.

The uppermost regional aquifer in this area is anticipated to be the Gage Aquifer, located at a depth of approximately 200 to 250 feet below ground surface (BGS).[31] The uppermost groundwater beneath most of the area occurs at a depth estimated at 50 feet BGS within sands of the Lakewood Formation; however, a thin perched zone of groundwater was encountered as shallow as 15 feet BGS in the northern portion of the expansion area.

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[27] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Prepared by: MACTEC, 1105 Sanctuary Parkway, Suite 300, Alpharetta, GA 30004.

[28] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Prepared by: MACTEC, 1105 Sanctuary Parkway, Suite 300, Alpharetta, GA 30004.

[29] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

[30] Leroy Crandall and Associates. 10 April 1969. *Report of Foundation Investigation, Proposed Hospital Addition and Parking Structure*. Contact: Leroy Crandall and Associates, 1700 South Main Street, Santa Monica, CA 90401.

[31] California Department of Water Resources. June 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*. Bulletin 104, Appendix A, Ground Water Geology. Contact: California Department of Water Resources, 1416 9th Street, Sacramento, CA 95814.

Groundwater has been encountered at depths of 40 to 50 feet BGS in the proposed project area. Approximately 10 to 15 percent of the proposed project site overlies an area that is potentially susceptible to liquefaction, as indicated on the California State Seismic Hazard Maps. A portion of the proposed project site, extending from near the intersection of Columbia Street and Atlantic Avenue in the northeast to the intersection of Patterson Avenue and Long Beach Boulevard on the west, is susceptible to liquefaction (Figure 3.4.2-2, *Mapped Liquefaction Hazard Zone*). This area is the former location of a ravine crossing the area that was backfilled with unclassified fill soil prior to the construction of the present hospital buildings. Some of this unclassified fill has subsequently been removed and replaced by engineered fill. Perched groundwater has been encountered in this fill material.[32] The perched water may be seasonal. Although much of this unsuitable fill material has been removed and replaced with compacted engineered fill, some of the fill remains and would need to be addressed in conjunction with site-specific geotechnical investigation.

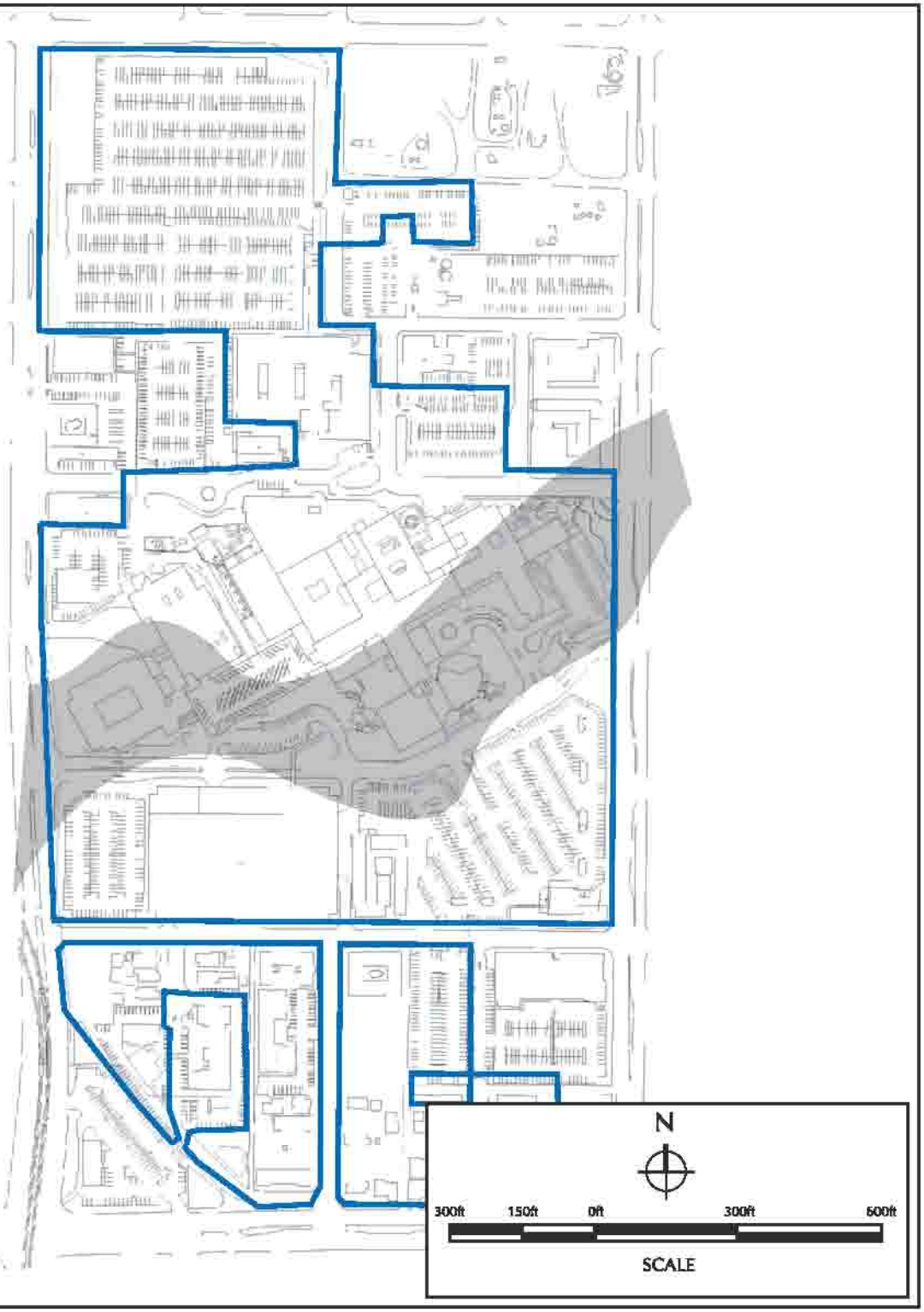
Substrate Stability

Substrate stability refers to the existing potential for the alluvium and artificial fill overlying the bedrock to exhibit seismic-related and geologic hazards, such as liquefaction, on- or off-site landslide, settlement/collapse, expansive soils, and subsidence.

Liquefaction is the transformation of surficial materials from a solid to a near-liquid state when moderate to severe seismic ground shaking causes pore-water pressure to increase in cohesionless (low relative density) materials (usually sand or silty sand). Loose granular soils and a temporary or permanent source of shallow groundwater are required for liquefaction to occur. Liquefaction can cause overlying structures to settle nonuniformly and cause buried structures to float within or atop liquefied soils. The liquefaction potential of an area is also controlled both by the depth of the water table and the relative density of the sediments. Based on soil parameters measured at the proposed project site, MACTEC has calculated the liquefaction-induced settlement to be less than 0.25 inches.[33] Where liquefaction does not occur, soils may be subject to seismic settlement from densification during severe shaking.

[32] SCS Engineers, Inc. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: SCS Engineers Inc., 3711 Long Beach Boulevard, Long Beach, CA 90807.

[33] MACTEC. 2003. Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California. Prepared by: MACTEC, 1105 Sanctuary Parkway, Suite 300, Alpharetta, GA 30004.



SOURCE: SCS Engineers

LEGEND

- Liquefaction Hazard Zone
- Long Beach Memorial Medical Center Campus Boundary

FIGURE 3.4.2-2
Mapped Liquefaction Hazard Zone

3.4.3 Significance Thresholds

The potential for the proposed project to result in impacts related to geology and soils was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines. The proposed project would normally be considered to have a significant impact related to geology and soils when the potential for any one of the following five thresholds occurs:

- Exposure of people or structures to potential substantial adverse effects, including the risk for loss, injury, or death involving the following:
    - Rupture of a known earthquake fault, as delineated on the most recent APEFZ Map, issued by the State Geologist for the area, or based on other substantial evidence of a known fault
    - Strong seismic ground shaking
    - Seismic-related ground failure, including liquefaction
    - Landslides
- Existence of substantial soil erosion (greater than 10 percent) or the loss of topsoil
- Location on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
- Location on expansive soil, as defined in Table 18-1-B of the UBC of 1994, creating substantial risks to life or property
- In addition to the State CEQA Guidelines above, the proposed project would be considered to result in significant impacts if implementation of the proposed project resulted in the exposure of people to hazardous concentrations of methane and/or hydrogen sulfide or damage to structures from the unexpected presence of an abandoned well or dry hole associated with oil and gas field–related activities.

3.4.4 Impact Analysis

Seismicity

The proposed project would not be expected to result in significant impacts to people or structures related to surface fault rupture. There are no active or potentially active faults that exhibit a surface expression that intersects the proposed project site. However, a number of known regional active faults are located at distances where they could produce substantial ground shaking at the proposed project site. Similar to development throughout most of Southern California, implementation of the proposed project would result in the exposure of persons at the proposed project site to substantial ground shaking, and thus a degree of seismic hazard risk. The proposed project would be constructed in accordance with the CBC, Long Beach Municipal Code, and UBC. In addition, the maximum probable seismic ground acceleration would be taken into consideration when designing all structures in order to minimize potential hazards. Furthermore, geotechnical studies prepared for each phase of building would be undertaken in accordance with the CGS

Guidelines for Evaluating and Mitigating Seismic Hazards in California.[34] The proposed project would be consistent with the goals and recommendations of the Seismic Safety element[35] of the Long Beach General Plan. Therefore, impacts associated with seismic hazards would be reduced to the least extent possible with incorporation of the recommendations of the site-specific geotechnical investigation into the proposed project plans and specifications.

Ground Failure/Liquefaction

While most of the Campus is not subject to liquefaction, portions of the proposed MCH improvements are located within the CGS liquefaction hazard zone (Figure 3.4.2-2). Potential impacts due to liquefaction could include foundation bearing failure or large foundation settlements, imposition of additional loads on foundations, localized lateral displacement (spreading) or compression, floatation of light structures, and damage to infrastructure such as streets and utilities. The liquefaction potential would be evaluated as part of the detailed geotechnical study for each new building phase and for any new infrastructure, as required by the CBC and UBC. Unsuitable fill soils located under proposed structures would be removed and replaced with properly engineered fill. Subsurface drainage would be provided where necessary to prevent near-surface soil saturation. Geotechnical studies and design would be undertaken in accordance with the CGS guidelines.[36] Therefore, impacts associated with potential liquefaction would be less than significant with the incorporation of CGS guidelines specifications.

Landslides

The proposed project would not result in significant impacts from seismically induced landslides. Due to the absence of steep slopes at the proposed project site, no nearby areas would likely be subject to landslides. No areas susceptible to seismically induced landslides are shown in the proposed project vicinity of the CGS Seismic Hazards Map. Landslides are not considered to be a potential hazard at the proposed project site; therefore, the proposed project would not result in an impact from landslides and no mitigation is required.

Soil Erosion

The proposed project would be expected to result in less than significant impacts related to a substantial increase in soil erosion or loss of topsoil. The materials most susceptible to erosion are artificial fill, younger alluvium (comparatively more recent deposits), and soil; all three materials may be present beneath the proposed project site. The largest source of erosion, particularly in an urban environment, is uncontrolled drainage during construction. The proposed project site does not contain any steep slopes or a drainage course. Erosion potential during construction would be managed to the maximum extent practicable with best management practices (BMPs) as part of compliance with the required National Pollutant Discharge Elimination System (NPDES) permit and associated Urban Storm Water Management Plan.

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[34] California Department of Conservation, Division of Mines and Geology. 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. Special Publication No. 117. Contact: California Department of Conservation, Division of Mines and Geology, 801 K Street, MS 14-33, Sacramento, CA 95814-3531.

[35] City of Long Beach, Department of Planning and Building. October 1988. *Seismic Safety Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[36] California Geological Survey. 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. CDMG Bulletin 117. Prepared by: California Geological Survey, 801 K Street, MS 12-30, Sacramento, CA 95814.

The City of Long Beach and the California Stormwater Best Management Practice Handbook[37] has identified standard BMPs that are capable of reducing impacts to soil erosion to below the level of significance. Therefore, impacts associated with erosion for exposed sections would be expected to be minimized to below the level of significance with the incorporation of standard BMPs.

Stability of Geologic Units and Soils

Substrate Stability

The proposed project would result in less than significant impacts related to the location of the proposed project on a geologic unit that is unstable, or that would become unstable as a result of the proposed project; therefore, no further mitigation is required.

Expansive Soil

The proposed project would be expected to result in less than significant impacts from expansive soils. Expansive soils expand with the addition of water, and shrink when dried due to a high clay content, which absorbs water. This can cause damage to overlying structures. The proposed project site substrate is high in granular content and low in clay content. This type of geologic unit has a very low risk factor for expansion (Appendix E). Therefore, the proposed project would not result in an impact from expansive soil and no further mitigation is required.

Oil and Gas Field–Related Issues

Subsidence and Settlement

The proposed project would not result in significant impacts related to subsidence. Subsidence hazard may be found in areas with active groundwater or petroleum production, or in areas with collapsible soil. No water production well fields large enough to overdraft aquifers are known to exist in the vicinity of the proposed project site. Portions of the proposed project area are within the Long Beach oil field. Historical research was conducted, and the approximate locations of former oil wells located at the site were determined. In the early 1920s, six oil wells were drilled in the MCH area and four were drilled in the Todd Cancer Institute (TCI) area. The recent investigation resulted in the identification of anomalies, characteristic of wells in the suspected locations of five of the ten oil wells (see Section 3.5, Hazards and Hazardous Materials, for additional details). Collapsible soils, including organic-rich peat deposits, have not been encountered during on-site subsurface exploration and have not been mapped in this area on a regional basis. For this reason, and because the proposed project site is directly over the oil field, the potential for future surface subsidence effects at the site is very low. Therefore, the proposed project would not result in an impact from subsidence and no further mitigation is required.

Contaminated Soil

As described in Section 3.5, evaluation of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) records for the proposed project area revealed nine former oil well locations on the proposed project site. Activities associated with oil well drilling and oil production, including drilling mud pits, sumps, and pipelines, may be encountered in the

[37] California Stormwater Quality Association. 2003. *California Stormwater Best Management Practice Handbook*. Contact: California Stormwater Quality Association, P.O. Box 2105, Menlo Park, CA 94026.

vicinity of the former wells. Some of these facilities may be associated with soil contaminated with hydrocarbons, metals, or other potentially hazardous substances. Soil with field indications of potential contamination encountered during project earthwork will be tested and removed if found to be contaminated or otherwise unsuitable. This approach will apply also to soils, described above as unclassified fill, located in a former ravine that was historically filled using petroleum-containing soil and miscellaneous oil field and other debris (see Section 3.5).

3.4.5 Cumulative Impacts

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, Project Description, would not result in cumulative impacts related to geology and soils. Because the geology and soils impacts expected from the implementation of the proposed project do not affect lands outside the boundaries of the proposed project site, these impacts do not create any cumulative impacts on the environment outside of the proposed project boundaries.

3.4.6 Mitigation Measures

Measure Geology-1

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric inpatient tower, Phases I and II, and the central plant building, shall be minimized through conformance with California Geological Survey's Guidelines for Evaluating and Mitigating Seismic Hazards in California and all applicable City of Long Beach codes and regulations related to seismic activity. MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric inpatient tower, Phases I and II, and the central plant building are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric inpatient tower, Phases I and II, and the central plant building, the Office of Statewide Health Planning and Development shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.

Measure Geology-2

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute (TCI) Phases I and II, and the parking structure, shall be minimized through conformance with California Geological Survey's Guidelines for Evaluating and Mitigating Seismic Hazards in California and all applicable City of Long Beach codes and regulations related to seismic activity. The Long Beach Memorial Medical Center (LBMMC) and MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure, the City of Long Beach Department of Public Works shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.

Measure Geology-3

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving geologic hazards related to liquefaction from seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric inpatient tower, Phases I and II, and the central plant building, shall be minimized through conformance with all applicable State of California and City of Long Beach codes and regulations. MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric inpatient tower, Phases I and II, and the central plant building are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric inpatient tower, Phases I and II, and the central plant building, the Office of Statewide Health Planning and Development shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.

Measure Geology-4

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving geologic hazards related to liquefaction from seismic ground shaking from the operation of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute (TCI) Phases I and II, and the parking structure, shall be minimized through conformance with all applicable State of California and City of Long Beach codes and regulations. The Long Beach Memorial Medical Center (LBMMC) and MCH shall ensure that the site-specific geotechnical investigations for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure are incorporated into proposed project plans and specifications. Prior to approval of final plans and specifications for the MCH pediatric outpatient building, MCH link building, TCI Phases I and II, and the parking structure, the City of Long Beach Department of Public Works shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.

Measure Geology-5

The City of Long Beach Department of Planning and Building shall require the construction contractor to implement best management practices that are consistent with the National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to avoid soil erosion during construction of the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, and central plant building. Prior to approval of final plans and specifications, the Office of Statewide Health Planning and Development (OSHPD) shall ensure that the requirement to comply with NPDES Permit No. CAS 004003 is included in the specifications. The OSHPD Inspector of Record shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003.

Measure Geology-6

The City of Long Beach Department of Planning and Building shall require the construction contractor to implement best management practices that are consistent with the National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to avoid soil erosion during construction of the Todd Cancer Institute (TCI) Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building and utility trench, MCH link building, roadway realignment, on-site parking areas (Lots N, P, Q, R, S, and T), and parking structure. Prior to approval of final plans and specifications, the City of Long Beach Department of Planning and Building shall ensure that the requirement to comply with NPDES Permit No. CAS 004003 is included in the specifications. The

City of Long Beach Department of Planning and Building shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003.

3.4.7 Level of Significance after Mitigation

Implementation of mitigation measures Geology-1 through Geology-6 and adherence to the standards of the UBC would reduce impacts associated with seismic hazards to the maximum extent practicable and impacts related to geology and soils to below the level of significance.

3.5 HAZARDS AND HAZARDOUS MATERIALS

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts related to hazards and hazardous materials. Therefore, this issue is being carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from hazards and hazardous materials and to identify potential alternatives.

The analysis of hazards and hazardous materials includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential hazards and hazardous materials that could be associated with the proposed project site were evaluated in accordance with the protocol established by the American Society for Testing and Material (ASTM) Standard E 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessments. Published and unpublished literature was also reviewed. The potential impacts from hazards and hazardous materials have been analyzed in accordance with the data compiled by Sapphos Environmental, Inc. and the technical reports prepared by SCS Engineers (Appendix F, *Health Risk Assessment and Environmental Summary Report*)[2] and Signal Geoscience (Appendix G, *Phase I Environmental Site Assessment*).[3]

3.5.1 Regulatory Framework

Federal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, also known as Superfund, outlines the potential liability related to the cleanup of hazardous substances, available defenses to such liability, appropriate inquiry into site status under Superfund, statutory definitions of hazardous substances and petroleum products, and the petroleum product exclusion under CERCLA. The proposed project would be subject to CERCLA for the cleanup of any hazardous substances.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] SCS Engineers. May 2004. *Environmental Summary Report, Long Beach Memorial Medical Center Expansion Area, Long Beach, California*. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

[3] Signal Geoscience. 2001. *Phase I Environmental Site Assessment Report, 300 East Spring Street, Long Beach, California*. Contact: Signal Geoscience, 3125 South Maddock Street, Santa Ana, CA 92704.

Superfund Amendment and Reauthorization Act Title III (SARA)

SARA of 1986 is the Emergency Planning and Community Right-to-Know Act.[4] Facilities are required to report the following items on U.S. Environmental Protection Agency (EPA) Form R, the Toxic Chemical Release Inventory Reporting Form: facility identification, off-site locations to which toxic chemicals are transferred in wastes, chemical-specific information, and supplemental information.

Form R requires a facility to list the hazardous substances that are handled on site and to account for the total aggregate releases of listed toxic chemicals for the calendar year. Releases to the environment are to include emissions to the air, discharges to surface water, and on-site releases to land and underground injection wells. The proposed project would be subject to SARA for the use, storage, transport, disposal, or release of toxic chemicals.

Resource Conservation and Recovery Act (RCRA)

RCRA[5] was the first major federal act regulating the potential health and environmental problems associated with solid waste hazards and nonhazardous waste. It gave the U.S. EPA the authority to control hazardous waste from the cradle to the grave.

RCRA regulates the potential health and environmental problems associated with hazardous and nonhazardous solid waste. RCRA and the implementation regulations developed by the U.S. EPA provide the general framework for the national hazardous and nonhazardous waste management systems. This framework includes the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.

RCRA amendments enacted in 1986 began the process of eliminating land disposal as the principal hazardous waste disposal method. Hazardous waste regulations promulgated in 1991 address siting, design, construction, operation, monitoring, corrective action, and closure of disposal facilities. Additional regulations addressing solid waste issues are contained in Title 40, Code of Federal Regulations (CFR), Part 258. The proposed project would be subject to the requirements of RCRA related to the generation, storage, or disposal of hazardous and nonhazardous solid wastes.

State

Hazardous Waste Control Law of 1972

The Hazardous Waste Control Law of 1972 is the original hazardous waste control law in California. This law initiated programs that track hazardous waste generators and their hazardous waste streams and handling practices. The proposed project would be subject to requirements of this law related to the generation, storage, and disposal of hazardous wastes.

[4] Office of the Law Revision Counsel. 22 January 2002. 42 U.S. Code, Chapter 116 et seq.: "Emergency Planning and Community Right-To-Know Act." Available at: http://uscode.house.gov

[5] Office of the Law Revision Counsel. 22 January 2002. 42 U.S. Code, §§6901–6987: "Solid Waste Disposal Act, Resource Conservation and Recovery Act of 1986." Available at: http://uscode.house.gov

Titles 22, 23, and 27 of the California Code of Regulations

In California, Titles 22 and 23 of the California Code of Regulations (CCR) address hazardous materials and wastes. Title 22 defines, categorizes, and lists hazardous materials and wastes. Title 23 addresses public health and safety issues related to hazardous materials and wastes, and it specifies disposal options. Title 27 of the CCR addresses landfill closure standards and landfill-related public health and safety issues. The proposed project would be subject to requirements of this law related to the use, generation, storage, and disposal of hazardous wastes.

The Hazardous Materials Release Response Plans and Inventory Law of 1986

The Hazardous Materials Release Response Plans and Inventory Law of 1986 (California Health and Safety Code, Section 25500 et seq.) governs hazardous materials handling, reporting requirements, and local agency surveillance programs. The proposed project would be subject to requirements of this law related to maintaining hazardous material inventories, business plans, and emergency response plans.

Title 8 of the California Code of Regulations

The California Occupational Safety and Health Administration (Cal/OSHA) has established requirements to limit occupational exposure to lead. Construction, alteration and repair work, including demolition, is subject to Title 8, CCR, Section 1532.1 for lead, which outlines permissible exposure limits, exposure assessment requirements, methods of compliance, and necessary respiratory protection and protective clothing. Demolition work associated with construction of the proposed project will be subject to this law.

California Laws for Conservation of Petroleum and Gas

The California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) regulates the oil, natural gas, and geothermal industries throughout the State of California. DOGGR oversees both active and abandoned wells and maintains records on well locations. In addition, the state legislature provides funding to DOGGR for the proper abandonment of hazardous, idle, and orphaned oil and gas wells.[6] Oil wells located at the proposed project site are subject to DOGGR oversight.

Regional

Asbestos-Containing Materials

Title 40, CFR, Part 61.145, National Emission Standard for Asbestos, Standard for Demolition and Renovation; and the South Coast Air Quality Management District (SCAQMD) Rule 1403, Asbestos Emissions from Demolition/Renovation Activities, require the following:

- The facility must conduct a survey to inspect, identify, and quantify all friable and Class I and Class II nonfriable asbestos-containing materials (ACMs) prior to demolition or restoration.
- Proper notification must be submitted to SCAQMD.

[6] California Department of Conservation, Division of Oil, Gas and Geothermal Resources. October 2003. *California Laws for Conservation of Petroleum & Gas*. Article 4.2. Publication No. PRC01. Available at: ftp://ftp.consrv.ca.gov/pub/oil/laws/PRC01.pdf

- An on-site representative must be present during removal, disturbance, and handling of ACMs.
- ACMs must be removed in accordance with the required schedule and procedures and following the proper handling operations.
- ACMs must be disposed of following proper disposal methodology, including maintaining waste shipment records and using appropriate labeling.

Underground Storage Tanks

The Los Angeles Regional Water Quality Control Board (RWQCB) oversees the Underground Storage Tank (UST) Program for the Los Angeles regional area. Specific areas of concern within the Los Angeles RWQCB jurisdiction are the Los Angeles River Watershed, the San Gabriel River Watershed, and the Los Angeles/Ventura Coastal Area. Regulatory authority for USTs in the proposed project area is held by the Long Beach/Signal Hill Certified Unified Program Agency (CUPA). As part of the CUPA, the Long Beach Fire Department oversees tank monitoring, installation, and removal, and the Long Beach Department of Health and Human Services oversees site mitigation.

Contaminated Soil and Groundwater

Under California Water Code, Division 7, Section 13304, the Los Angeles RWQCB oversees investigation and mitigation of sites contaminated from USTs, wells, or other sources. Oversight by the Los Angeles RWQCB is not limited to specific pollutants or specific media but is focused on determining if an unauthorized release may result in pollution of regional water bodies. In addition, SCAQMD Rule 1166 sets control requirements for volatile organic compound (VOC) emissions from excavating, grading, handling, or treating contaminated soil and SCAQMD Rule 1150 requires implementation of an approved Excavation Management Plan for excavations of landfill material. Requirements include development and approval of a mitigation plan, notification to SCAQMD, monitoring, and handling requirements for the contaminated soil.

Local

Medical Waste

The City of Long Beach Bureau of Environmental Health manages the enforcement and compliance program for medical waste generation facilities. As defined in the Medical Waste Management Act, registration and/or permitting by the local enforcement agency (LEA) is required for medical waste generation facilities that perform on-site treatment of medical waste, produce greater than 200 pounds per month of medical waste, or store medical wastes from multiple small generators prior to disposal using a registered hazardous waste transporter. Qualifying medical waste generation facilities may be granted a limited quantity hauling exemption.[7]

Handling, Storage, and Transport of Hazardous Materials

Regulatory authority hazardous materials management in the City of Long Beach is held by a CUPA. As part of the CUPA, the Long Beach Department of Health and Human Services regulates storage and disposal of hazardous materials through enforcement and education programs. The Long Beach Department of Health and Human Services manages the Hazardous Waste Generator Inspection

[7] City of Long Beach, Bureau of Environmental Health. 2004a. Accessed August 2004. "Medical Waste Generators." Available at: http://www.longbeach.gov/health/organization/eh/hazmat/med_waste.asp

Program and California Accidental Risk Prevention (CalARP) Program, which requires facilities with greater than threshold levels of hazardous materials to file a hazardous materials inventory that includes storage locations and emergency contact information for the facility. The Long Beach Fire Department oversees the Hazardous Materials Inspection/Business Plan Program to monitor compliance with hazardous materials storage requirements. The Hazardous Materials Division also works with the Long Beach Fire Department to respond to chemical emergencies to ensure proper containment and clean up.[8] Regulation 29, CFR, Section 1910.120, Hazardous Waste Operations and Emergency Response, under the authority of the federal Occupational Safety and Health Administration (OSHA) and Cal/OSHA, outlines methods and requirements for workers who handle or are potentially exposed to hazardous wastes and materials.

Airport Land Use Plan

Development in the area of an airport must comply with federal, state, and local regulations designed to protect public safety. The Federal Aviation Administration (FAA), under Title 14, CFR, Chapter 1, sets height restrictions for developments near airports to avoid any potential interference with the navigable airspace. The Los Angeles County Regional Planning Commission also serves as the Airport Land Use Commission (ALUC) to evaluate public safety and noise issues related to airports within the County of Los Angeles. The ALUC adopted the Los Angeles County Comprehensive Airport Land Use Plan (ALUP) to guide development within the vicinity of County of Los Angeles airports in order to ensure land use compatibility. Safety policies within the plan include establishment of approach surfaces and runway protection zones patterned after guidance from the FAA Federal Aviation Regulations (FAR) Part 77, and restrictions in the vicinity of airports on flammable or toxic materials storage, lights, electrical interferences, structure heights, and uses that could interfere with visibility (e.g., attraction of birds, smoke generation, etc.). The Long Beach Airport is listed in the County of Los Angeles ALUP; however, no specific Airport Master Plan has been adopted to guide development in and around the Long Beach Airport.

3.5.2 Existing Conditions

Routine Transport, Use, or Disposal of Hazardous Materials

The medical uses of buildings, within and adjacent to the existing Long Beach Memorial Medical Center campus (Campus), produce hazardous, biomedical, and radiological wastes, which are disposed of in off-site disposal facilities. Medical wastes include, but are not be limited to, soiled or blood-soaked bandages, culture dishes and other glassware, discarded surgical gloves, discarded surgical instruments (e.g., scalpels and needles), cultures, stocks, swabs, removed body organs (e.g., tonsils, appendices, limbs, etc.), and lancets.

Release of Hazardous Materials into the Environment

Buildings located within the proposed project area that were constructed prior to 1979 have the potential for ACMs and lead-based paints (LBPs).

Site investigations in the expansion areas have identified the presence of former oil wells, a former ravine-fill landfill, and hydrocarbon contaminated soil (Figure 3.5.2-1, *Abandoned Pipelines, Contours of Former Ravine, and Geotechnical Borings*). Site investigation reports have been completed for both

[8] City of Long Beach, Bureau of Environmental Health. 2004b. Accessed August 2004. "Hazardous Materials Division Information Guide." Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=1989

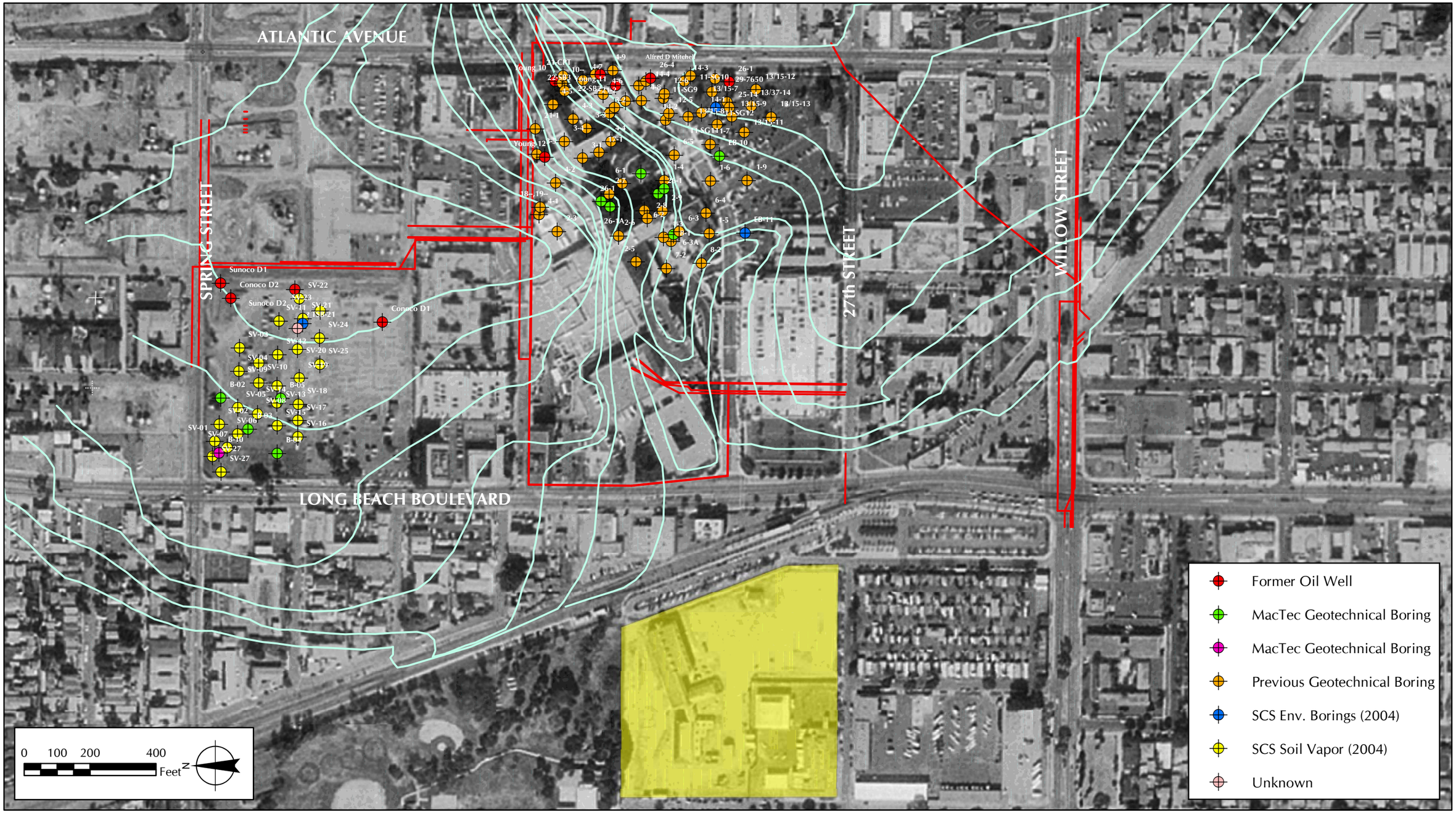

FIGURE 3.5.2-1
Abandoned Pipelines, Contours of Former Ravine, and Geotechnical Borings

the Miller Children's Hospital (MCH) and Todd Cancer Institute (TCI) (Appendix F). The MCH pediatric inpatient tower Phase I and II, MCH pediatric outpatient building, MCH link building, and TCI Phases I and II are located above or near former oil wells, as identified by the DOGGR.[9]

Todd Cancer Institute

From the mid to late 1920s, four oil wells were drilled in the TCI area. Two of these wells were improperly abandoned in the early 1900s. The other two wells were abandoned following acceptable methods in 1958 and 1972. Pipelines and other associated oil production facilities may still be located below ground surface. Geophysical surveys were conducted by SCS Engineers to locate the abandoned oil wells in July and October 2004 in the TCI area. The investigations resulted in the identification of anomalies characteristic of wells in the suspected locations of two of the four oil wells.

Soil and soil vapor investigation of the TCI site indicated detectable total petroleum hydrocarbons (TPH) in samples from only one of the five soil boring locations, thus confirming the presence of diesel or heavier hydrocarbon contamination. The maximum TPH concentration detected was 1,300 milligrams per kilogram (mg/kg) of hydrocarbons in the C23 to C32 range in the sample from the 5-foot depth. The location of the boring where TPH was detected is approximately 175 feet from the proposed footprint of the Phase I TCI building and approximately 50 feet from the footprint of the Phase II TCI building. The sampling analysis also resulted in limited detections of VOCs and metals. Metals, with the exception of arsenic and selenium, were detected in the range of background concentrations.[10] All metals, with the exception of arsenic, were present at concentrations below the U.S. EPA's residential or industrial Preliminary Remediation Goals (PRG).[11] The maximum concentration of arsenic detected was 23 mg/kg in the 20-foot depth of one soil boring. To date, the soil sample tests in the TCI area have not revealed hazardous waste to a degree of contamination that would be subject to regulation under RCRA.

Miller Children's Hospital

From the early to late 1920s, six oil wells were drilled in the MCH area. Geophysical surveys were conducted by SCS Engineers to locate the abandoned oil wells in March 2004. The investigations resulted in the identification of anomalies characteristic of wells in the suspected locations of three of the six oil wells. Investigation in the area proposed for MCH expansion, undertaken by SCS Engineers in March 2004, indicated that the site includes a former ravine that was historically used as landfill, and which was filled using petroleum-containing soil and miscellaneous oil field wastes and other debris, including wood, concrete, and asphalt. The former ravine fill area is listed as an inactive landfill site on the California Integrated Waste Management Board's Solid Waste Information System (SWIS). Soil samples were collected and vapor monitoring was conducted as part of the investigation. Soil samples were analyzed for TPH, VOCs, trace metals, polychlorinated biphenyls (PCBs), and chlorinated pesticides. Soil-sampling results indicated the presence of petroleum hydrocarbons, benzene, and petroleum-related VOCs throughout the former ravine area. The maximum detected concentration of TPH as diesel and heavy hydrocarbons was 49,700 mg/kg from a boring taken near

[9] Signal Geoscience. 2001. *Phase I Environmental Site Assessment Report, 300 East Spring Street, Long Beach, California*. Contact: Signal Geoscience, 3125 South Maddock Street, Santa Ana, CA 92704.

[10] G.R. Bradford, et al. 1996. *Background Concentrations of Trace and Major Elements in California Soils*. Contact: University of California at Berkeley, Division of Agriculture and Natural Resources, Kearney Foundation of Soil Science, 140 Giannini Hall, #3100, Berkeley, CA 94720.

[11] U.S. Environmental Protection Agency. 27 October 2004. "Preliminary Remediation Goals." Available at: http://www.epa.gov/region09/waste/sfund/prg/index.htm

the corner of Atlantic Avenue and Columbia Street. Metals, such as lead, arsenic, mercury, and zinc, were also detected at levels greater than would be expected in background soils. Both arsenic and lead were detected at levels greater than residential PRGs. Arsenic was detected at levels greater than the industrial PRG[12] at a maximum concentration of 26.8 mg/kg. The soil sample tests in the MCH area to date have not revealed hazardous waste of a degree of contamination that would be subject to regulation under RCRA.

Vapor monitoring probes were installed in three of the boring locations in the MCH area to analyze for methane. One boring measured detectable concentrations of methane at 0.6 percent by volume. The source of the methane was not identified. Soil characterization indicated the presence of construction debris (e.g., concrete, wood, glass, metal, and broken brick) in the former ravine area at varying depths below ground surface.[13]

Previous site investigations have revealed visual evidence of oil contamination in the perched zone of groundwater.[14] Deeper groundwater monitoring has shown detectable concentrations of petroleum in samples taken from monitoring wells in the area near the MCH.

Existing or Proposed Schools

One elementary school is located within 0.25 mile of the proposed project. Jackie Robinson Elementary is located at 2750 Pine Avenue in Long Beach, approximately 0.21 miles west of the location proposed for the new parking structure at the southern edge of the proposed project on 27th Street.

Hazardous Materials Sites Pursuant to Government Code Section 65962.5

A portion of the proposed project is located on land formerly occupied by USTs, as indicated on the RWQCB Leaking Underground Storage Tank (LUST) listing.[15] Although records of tank removals were not available, results of the site geophysical survey did not indicate the presence of any remaining USTs.[16]

In addition, former oil wells, petroleum hydrocarbon–contaminated soil, and a former ravine filled with oil production wastes and construction debris exist at the proposed project site.

Proposed Project Located Near Airport or Private Airstrip

The proposed project is located approximately 1.8 miles west of the Long Beach Airport.

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[12] U.S. Environmental Protection Agency. 27 October 2004. "Preliminary Remediation Goals." Available at: http://www.epa.gov/region09/waste/sfund/prg/index.htm

[13] SCS Engineers. May 2004. *Environmental Summary Report, Long Beach Memorial Medical Center Expansion Area, Long Beach, California*. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

[14] Law/Crandall, Inc. 1991. *Report of Phase I and Limited Phase II Site Assessment Proposed Children's Medical Office Building Long Beach, California for the Long Beach Memorial Medical Center*. Contact: Leroy Crandall and Associates, 1700 South Main Street, Santa Monica, CA 90401.

[15] Signal Geoscience. 2001. *Phase I Environmental Site Assessment Report, 300 East Spring Street, Long Beach, California.* Contact: Signal Geoscience, 3125 South Maddock Street, Santa Ana, CA 92704.

[16] SCS Engineers. May 2004. *Environmental Summary Report, Long Beach Memorial Medical Center Expansion Area, Long Beach, California*. Prepared by: SCS Engineers, 3711 Long Beach, Boulevard Long Beach, CA 90807.

Emergency Response Plan or Emergency Evacuation Plan

The Campus is served by a network of public roadways and private driveways. Columbia Street is the primary route of travel for emergency response vehicles (Figure 3.5.2-2, *Emergency Vehicular Access*). In addition, there are six primary entrances that are used by the medical staff, employees, patients, and visitors to access the Long Beach Memorial Medical Center (LBMMC) and MCH from the surrounding parking facilities (Figure 3.5.2-3, *Pedestrian Access to Hospitals*).

Wildland Fires

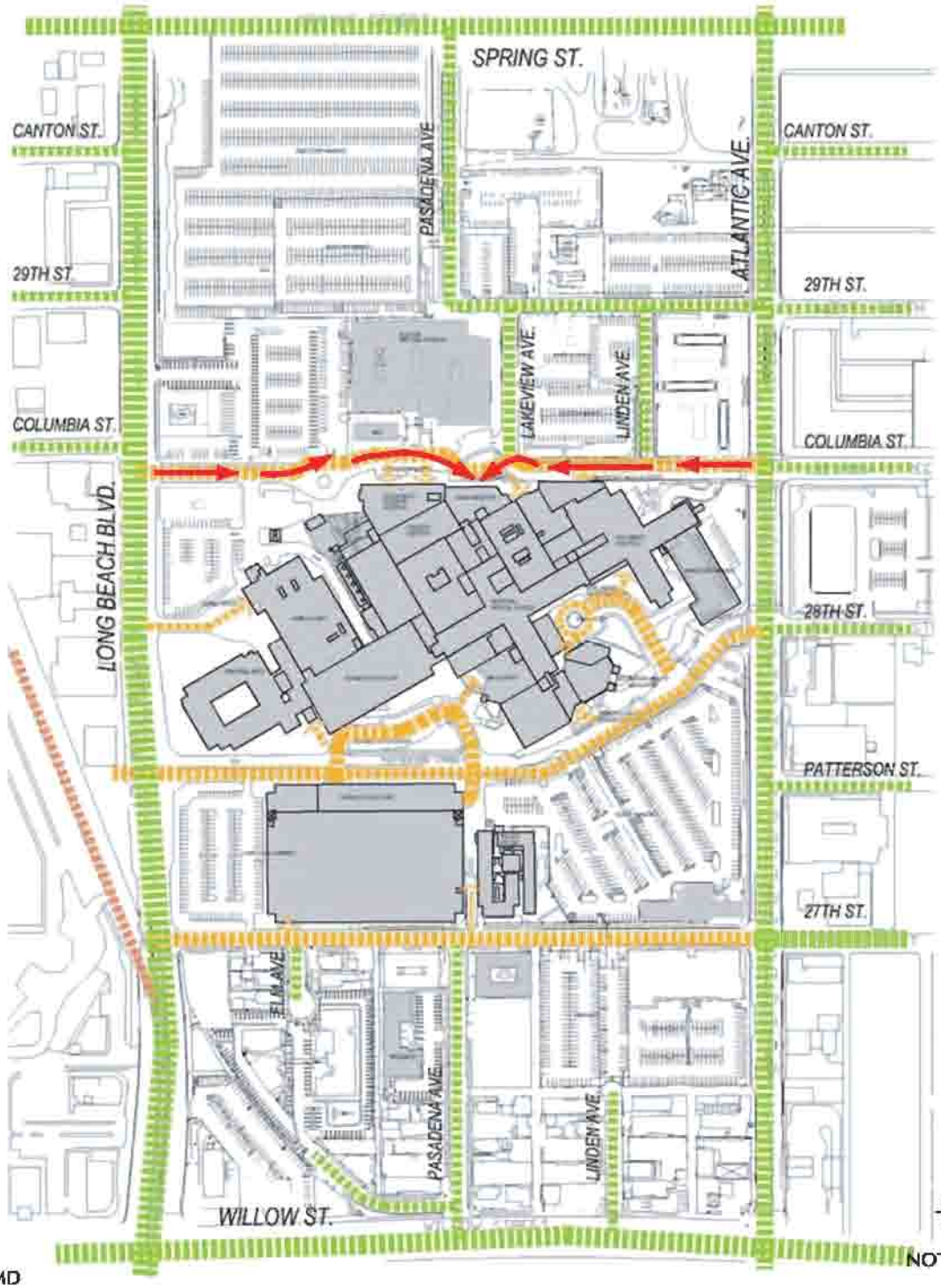
The proposed project is located entirely in a developed urban area. Therefore, the proposed project would not expose people or property to wildland fire hazards.

3.5.3 Significance Thresholds

The potential for the proposed project to result in impacts related to hazards and hazardous materials was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

A project would normally be considered to have a significant impact related to hazards and hazardous materials when the potential for any one of the following eight thresholds occurs:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and as a result, would create a significant hazard to the public or the environment
- Is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and results in a safety hazard for people residing or working in the project area
- Is within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area
- Impairs implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan
- Exposes people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

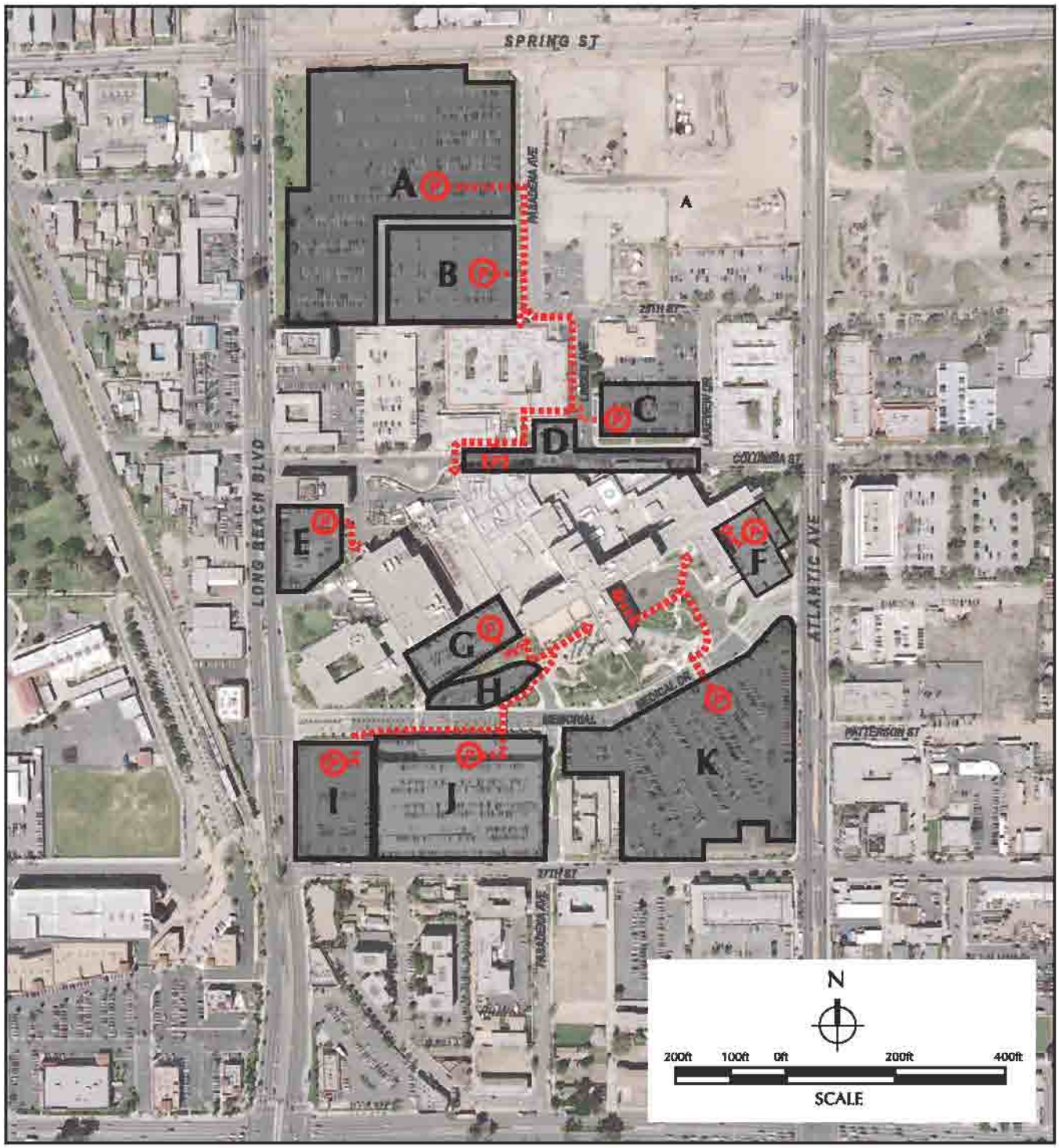


SOURCE: KMD

LEGEND

- General Traffic
- Campus Traffic
- Emergency Response Vehicles Route of Travel

FIGURE 3.5.2-2
Emergency Vehicular Access



LEGEND

- Accessible Pedestrian Path from Parking Lot to Building Entry
- Parking
- A Staff/Employee
- B Patient/Visitor
- C Patient
- D Doctors
- E Staff/Employee
- F Patient
- G Doctor
- H Patient/Visitor
- I Staff/Employee
- J Staff/Employee and Patient/Visitor
- K Patient/Visitor

FIGURE 3.5.2-3
Pedestrian Access to Hospitals

3.5.4 Impact Analysis

Routine Transport, Use, or Disposal of Hazardous Materials

The proposed project would involve the excavation and disposal of hydrocarbon-contaminated soils and generation of possible hazardous building materials (e.g., ACMs and LBPs) from demolition activities. An asbestos- and lead-sampling survey would be conducted prior to demolition activities at the site, and the material resulting from demolition would be disposed of accordingly. In addition, the excavation of contaminated soils associated with both the MCH and the TCI projects would result in the off-site disposal of contaminated soils and possibly groundwater impacted by petroleum hydrocarbons.

The proposed project would create a hazard that could affect the public or the environment through the routine transport, use, or disposal of hazardous materials generated during the construction phase of the proposed project. Potential ACMs and LBPs, previously identified hydrocarbon-contaminated soils, and potentially contaminated groundwater would have to be properly removed or abated by licensed contractors and properly disposed. Soils containing petroleum hydrocarbons will be excavated from the footprint of the buildings and possibly from areas of roadway construction and transported off site for disposal at the appropriate facilities. In addition, fuels and lubricants used for construction vehicles could impact the site due to leakage.

Medical wastes (i.e., biomedical and radiological waste) produced by hospital facilities are subject to both federal and state waste-hauling regulations; the use and disposal of these materials pose significant impacts on the environment. Therefore, implementation of the proposed project has the potential to result in significant impacts to the public or the environment related to the transport, use, or disposal of hazardous materials, and will require consideration of appropriate mitigation measures.

Release of Hazardous Materials into the Environment

Construction of the proposed project would require the demolition of the WIC Building and parking structure and may result in the accidental release of ACMs or LBPs into the environment. Construction equipment–related fuels and lubricants also have the potential for accidental release into the environment if proper care is not utilized. Soils containing petroleum hydrocarbons and potentially contaminated groundwater may be encountered during excavation and building foundation construction and will require proper treatment and disposal. In addition, during operation of the proposed project, hazardous materials may be disposed off site on a frequent basis during normal operations of both the MCH and TCI facilities.

The proposed project would create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The removal of ACMs and LBPs at the proposed project site creates the potential for a release of asbestos and lead into the environment. In addition, fuels and lubricants used for construction vehicles may impact the site due to leakage, spillage, or accidents. Therefore, implementation of the proposed project has the potential to result in significant impacts to the environment related to the accidental release of ACMs and LBPs, and will require the consideration of mitigation measures.

Summary of Health Risk Assessment for Miller Children's Hospital and Todd Cancer Institute

A human Health Risk Assessment (HRA) was prepared to evaluate the potential current or baseline (i.e., current conditions) risks to human health prior to the expansion of MCH and construction of TCI, as well as risks during and after construction activities at MCH and TCI (Appendix F). The primary objective of the HRA was to provide upper-bound, reasonable maximum exposure (RME), health-conservative estimates of the potential human health effects associated with exposures to chemicals detected in soil at the proposed project site. Analytical results from chemical analyses of soil and groundwater samples collected during investigations at the proposed project site were used to evaluate risks to human receptors that have the potential to be exposed to contaminants at the proposed project site. Based on the evaluation of analytical data collected at the proposed project site, chemicals of potential concern (COPCs) were identified and further evaluated in the HRA. COPCs included VOCs, inorganic substances (metals), and petroleum hydrocarbons.

Potential receptors identified and evaluated in a current land use scenario include the following:

- Off-site populations
    - Residents (adults and children)
    - Hospital patients (adults and children)
    - Commercial, industrial, and hospital workers

The following populations were considered to be potentially exposed under a project land use scenario, during and after construction of the MCH expansion facilities:

- On-site populations
    - Construction workers
    - Hospital patients (adults and children)
    - Commercial, industrial, and hospital workers
- Off-site populations
    - Residents (adults and children)
    - Hospital patients (adults and children)
    - Commercial, industrial, and hospital workers

In addition to potential exposure via inhalation of VOCs, the measures to protect the health of workers involved in grading, excavation, trenching, or other earthwork may be appropriate if petroleum-containing soil is encountered during construction of the proposed project.

On-site hospital patients and commercial, industrial, and hospital workers were considered to be located in either the MCH inpatient tower or the TCI facility, whereas off-site hospital patients and commercial, industrial, and hospital workers were considered to be located in the LBMMC main building, which is located approximately 800 feet from the center of the MCH inpatient tower Phase I and 1,160 feet from the center of the proposed TCI facility.

For risk assessment purposes, chemicals are separated into two categories of toxic effects, carcinogenic and noncarcinogenic. For chemicals exhibiting noncarcinogenic effects, a hazard index (HI) is calculated by summing the ratios of the exposure levels (chronic daily intakes or CDIs) and the safe long-term dose levels (reference doses or RfDs). An HI less than 1 indicates that there is not likely to be any adverse health effects from the exposure, whereas an HI greater than 1 indicates that there is a potential health hazard associated with exposure to COPCs.

For chemicals exhibiting carcinogenic effects, a cancer slope factor (CSF) is used to determine how potent the chemical is in causing cancer. The CSF is an expression of the cancer-causing potential of a particular contaminant; the larger the CSF, the greater the potential for that contaminant to cause cancer. To determine the theoretical excess lifetime cancer risk (ELCR) for a particular chemical contaminant, CSFs are multiplied by the CDI of the contaminant under consideration. The total lifetime cancer risk for a site is determined by summing all the individualized cancer risks for the various COPCs.

Based on the risk evaluation, the total HI and ELCR for all current scenario and project scenario potential receptors evaluated at the MCH and TCI sites were at or below the thresholds established for the proposed project (HI = 1; ELCR = 1×10^{-5}). However, measures to protect the health of workers involved in grading, excavation, trenching, or other earthwork may be appropriate if petroleum-containing soil is encountered during construction of the proposed project.

The proposed project may result in significant impacts to exposed individuals or the environment if exposure to COPCs in soil occurs; therefore, consideration of mitigation measures may be appropriate.

Sapphos Environmental, Inc. met with the Department of Toxic Substances Control (DTSC) on January 11, 2005, to present the proposed project and HRA (Appendix F). As a result of the meeting, LBMMC agreed to enter into a Voluntary Clean-up Agreement (VCA) with DTSC, which would serve as the mechanism for DTSC to complete the site characterization study and HRA. LBMMC will work directly with DTSC to finalize the mitigation measures specified in the EIR to ensure their adequacy in remediating health risks to below the level of significance.

Existing or Proposed Schools

Off-site transport and disposal routes for biomedical, radiological, hazardous, and nonhazardous wastes may include the route along Long Beach Boulevard from LBMMC to Interstate 405, which is within 0.25 miles of the school. No other school sites are located within 0.25 miles of that route. The proposed project is expected to result in impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste, to existing or proposed schools located within 0.25 mile of the proposed project site. One existing school, Jackie Robinson Elementary, is located at 2750 Pine Avenue in Long Beach, within 0.25 miles west of the proposed project site and the likely transport path along Long Beach Boulevard to Interstate 405. Therefore, implementation of the proposed project has the potential to result in significant impacts to the environment related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste to existing or proposed schools and will require the consideration of mitigation measures.

Hazardous Waste Sites

The proposed project would result in significant impacts to the public or the environment due to its proposed location on a prior oil field–related disposal site. The proposed project is located in an area where soils containing petroleum hydrocarbons from oil field operations have been identified. The existence of abandoned and improperly abandoned oil wells, and the existence of petroleum hydrocarbon–contaminated soils, water, and buried construction debris have the potential to expose the public or the environment to risks related to potential release of hazards and hazardous materials.

According to DOGGR, all oil wells must be identified and properly abandoned prior to site redevelopment. Several former oil wells at the MCH site could not be located using geophysical survey methods. The two unidentified wells at the TCI site were listed as being improperly abandoned in 1927. These wells will need to be located and abandoned prior to developing the proposed project site to avoid potential hazards. Improperly abandoned oil wells can allow for vertical migration of methane, hydrogen sulfide, and other petroleum-related compounds. If structures are constructed over these structures, gases may accumulate in underground areas (e.g., basements) or inside buildings. Methane and other petroleum-related compounds are flammable, and without proper ventilation, risk of fire or explosion could exist. Incorporation of appropriate mitigation measures during excavation of soils associated with the proposed project would be necessary to avoid hazards to the public or the environment.

Proposed Project Located Near Airport or Private Airstrip

The proposed project is located within 2 miles of an existing airport. However, as indicated by the County of Los Angeles ALUP, the proposed project site is not located in a runway protection zone. In addition, the proposed project is not located in the flight path for the airport.

Guidance included in the County of Los Angeles ALUP and listed in FAR Section 77.13, Part 77, indicates that notification to the FAA administrator is required when construction or alteration of any structure or the use of construction equipment is greater than 200 feet in height, within 5 miles of an airport, or greater in height than an imaginary surface extending proportionally upward and outward from the end of a runway. The proposed project involves the construction of the combined Phase I and Phase II MCH pediatric inpatient tower, with the highest point being approximately 148 feet above grade. In addition, construction activities for the proposed project may involve the use of tall cranes associated with building construction. FAR Section 77.15, Part 77, also states that notification to the FAA administrator is not required for construction where:

> Any object that would be shielded by existing structures of a permanent of substantial character or by natural terrain or topographic features of equal or greater height, and would be located in a congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

Other tall buildings exist in the immediate area of the proposed project. In addition, elevation gains for Signal Hill rise toward the west of the proposed project site and continue to a peak elevation of greater than 350 feet within 1.5 miles southwest of the site. Adjacent buildings within the existing hospital area reach seven stories high. Across Atlantic Avenue, between Spring Street and Willow Street, existing buildings are up to five stories high. According to the Airport Bureau at the Long Beach Airport, proposed buildings located at the Campus will not interfere with the flight path due to the

distance from the airport and the shielding provided by Signal Hill and nearby structures.[17] In addition, buildings or structures less than 200 feet high, located as far away from the airport as the Campus, will not require notification to the FAA.[18] Therefore, building heights at the proposed project do not have the potential for significant impact to airport safety and do not require implementation of mitigation measures.

Emergency Response Plan or Emergency Evacuation Plan

The proposed project would result in significant impacts to the emergency response plan or emergency evacuation plan. Construction, demolition, and roadway realignment in the area of the MCH expansion will eliminate a short-term emergency water supply, affect existing evacuation routes for personnel from the southern and eastern wings of the current MCH facility, and temporarily affect emergency response vehicle routing as well as the evacuation routes from the main hospital facility and MCH. Therefore, mitigation measures will be required to address these impacts.

Wildland Fires

The proposed project would not be expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. There are no wildlands that would be subject to fire on or near the proposed project site. Therefore, the proposed project would not be expected to result in significant impacts related to the exposure of people or property to risks from wildland fires, and the consideration of mitigation measures is not required.

The proposed project includes the demolition of the parking structure located adjacent to the MCH facility. Currently, a short-term emergency water supply is located in this parking structure. The construction of the MCH expansion facility would also affect existing evacuation routes for personnel from the southern and eastern wings of the current MCH facility.

In addition, the roadway realignment associated with the proposed project would temporarily affect emergency response vehicle routing and the evacuation routes from the main hospital facility and MCH.

3.5.5 Cumulative Impacts

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, Project Description, would not result in cumulative impacts related to hazards and hazardous materials. Because the hazards and hazardous materials impacts expected from the implementation of the proposed project do not affect lands outside the boundaries of the proposed project site, these impacts do not create any cumulative impacts on the environment outside of the proposed project boundaries.

[17] Christine Edwards, *Personal Communication*, 4 November 2004. Long Beach Airport Special Projects, 4100 Donald Douglas Drive, Long Beach, CA 90808.

[18] Government Printing Office. 1 January 2004. Code of Federal Regulation, Title 14, Part 77.13: "Construction or Alteration Requiring Notice." Available at: http://www.faa.gov/regulations/index.cfm

3.5.6 Mitigation Measures

Measure Hazards-1

To avoid exposure to asbestos-containing materials (ACMs) and lead-based paints (LBPs) during demolition, construction, and remediation activities, the City of Long Beach and the Office of Statewide Health Planning and Development shall require that all such materials and wastes be identified and an Operations and Maintenance (O&M) Plan developed prior to the issuance of demolition permits for each structure constructed prior to 1979. The O&M Plan shall ensure compliance with all applicable federal, state, and local requirements and specify all work to be done, including lead and asbestos surveys of structures to be demolished, proper handling and storage of lubricants and fuels for construction equipment, and methods for remediation of ACMs and LBPs, if necessary. The O&M Plan must be submitted to the City of Long Beach Department of Health for review and approval prior to initiation of construction and demolition activities for the Miller Children's Hospital pediatric inpatient tower and central plant building, and the construction of parking lots requiring the demolition of pre-1979 constructed buildings. The O&M Plan shall, as appropriate and necessary, conform to the requirements of the Los Angeles County Department of Health Services (Local Enforcement Agency for landfills), South Coast Air Quality Management District, the Los Angeles Regional Water Quality Control Board, and the Department of Toxic Substances Control. Compliance with the O&M Plan shall be monitored by the City of Long Beach Department of Planning and Building throughout construction and demolition.

Measure Hazards-2

To reduce the potential for exposure of people or property to petroleum hydrocarbon–contaminated soils and water, the Office of Statewide Health Planning and Development (OSHPD) shall require that petroleum hydrocarbon–contaminated soils and water be tested, treated, and disposed of as necessary under the oversight of the Department of Toxic Substances Control (DTSC). The OSHPD shall review plans and specifications for those elements of the proposed project to be constructed over unclassified fill: Miller Children's Hospital (MCH) pediatric inpatient tower Phase I, central plant building, and utility trench. The OSHPD shall ensure that the proposed project plans and specifications disclose the potential to encounter petroleum hydrocarbon–contaminated soils and water, and require the construction contractor to remove petroleum hydrocarbon–contaminated soils and water within the construction zone, in accordance with all applicable federal, state, and local statutes and regulations and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and DTSC.

Measure Hazards-3

To reduce the potential for exposure of people or property to petroleum hydrocarbon–contaminated soils and water, the City of Long Beach shall require that petroleum hydrocarbon–contaminated soils and water be tested, treated, and disposed of as necessary under the oversight of the Department of Toxic Substances Control (DTSC). The City of Long Beach shall review plans and specifications for those elements of the proposed project to be constructed over unclassified fill: Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and the Todd Cancer Institute Phases I and II. The City of Long Beach shall ensure that the proposed project plans and specifications disclose the potential to encounter petroleum hydrocarbon–contaminated soils and water, and require the construction contractor to remove petroleum hydrocarbon–contaminated soils and water within the construction zone, in accordance with all applicable federal, state, and local statutes and

regulations and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and DTSC.

Measure Hazards-4

Oil wells underlying the Miller Children's Hospital (MCH) pediatric inpatient tower Phase I, central plant building, and utility trench shall be identified by the remediation contractor and properly abandoned to the current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). The project applicant shall ensure that coordination with DOGGR and proper remediation be incorporated into the construction plans, prior to final approval of plans for the MCH pediatric inpatient building Phase I, central plant building, and utility trench. If the oil wells cannot be identified through site survey by a licensed surveyor, excavation shall be undertaken to locate the wells under the oversight of the DOGGR and/or the Office of Statewide Health Planning and Development. If the abandoned oil wells are determined to be leaking, remediation shall be conducted to seal all leaks or venting systems shall be required to transmit gas safely away from the proposed project site, in accordance with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-5

Oil wells underlying the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II shall be identified by the remediation contractor and properly abandoned to the current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). The project applicant shall ensure that coordination with DOGGR and proper remediation be incorporated into the construction plans, prior to final approval of plans for the MCH pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II. If the oil wells cannot be identified through site survey by a licensed surveyor, excavation shall be undertaken to locate the wells under the oversight of DOGGR and/or the City of Long Beach. If the abandoned oil wells are determined to be leaking, remediation shall be conducted to seal all leaks or venting systems shall be required to transmit gas safely away from the proposed project site, in accordance with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-6

To mitigate potential accumulation of methane, hydrogen sulfide, or other petroleum-related gases into underground areas (i.e., basements) or inside buildings, the Office of Statewide Health Planning and Development (OSHPD) shall require the installation of vapor barriers (i.e., high-density polyethylene membrane liners) and passive venting systems in the foundations of the Miller Children's Hospital pediatric inpatient tower and central plant building, if determined to be required by the Health Risk Assessment. Prior to the issuance of building permits for the specified buildings, the OSHPD shall review the plans and specifications to ensure that the appropriate vapor barriers or passive venting systems have been incorporated into the design and are consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-7

To mitigate potential accumulation of methane, hydrogen sulfide, or other petroleum-related gases into underground areas (i.e., basements) or inside buildings, the City of Long Beach shall require the installation of vapor barriers (i.e., high-density polyethylene membrane liners) and passive venting systems in the foundations of the Miller Children's Hospital (MCH) pediatric outpatient building and the Todd Cancer Institute Phases I and II, if determined to be required by the Health Risk Assessment. Prior to the issuance of building permits for the specified buildings, the City of Long Beach shall review the plans and specifications to ensure that the appropriate vapor barriers or passive venting systems have been incorporated into the design and are consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-8

Prior to the issuance of grading permits for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, the Office of Statewide Health Planning and Development shall review the grading plans to ensure that there is a note requiring the construction contractor to stop work and notify the Certified Unified Program Agency of the unanticipated encounter of underground storage tanks (USTs) during grading activities. The UST shall be remediated in accordance with County of Los Angeles guidelines and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-9

Prior to the issuance of grading permits for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II, the City of Long Beach shall review the grading plans to ensure that there is a note requiring the construction contractor to stop work and notify the Certified Unified Program Agency of the unanticipated encounter of underground storage tanks (USTs) during grading activities. The UST shall be remediated in accordance with County of Los Angeles guidelines and consistent with specifications of the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-10

To avoid exposure to asbestos-containing materials, lead-based paints, petroleum hydrocarbon–contaminated soils, biomedical waste, and radiological waste during routine transport and disposal for both the construction phase and operational phase of the proposed project, the City of Long Beach shall require that the construction contractor and the Long Beach Memorial Medical Center (LBMMC) store, use, and transport all hazardous materials in compliance with all relevant regulations and guidelines. The routine transport of hazardous materials to and from the LBMMC campus during construction and operation of the elements of the proposed project shall be accomplished via Atlantic Avenue, Spring Street, Columbia Street, Patterson Street, 27th Street, and Willow Street. Compliance shall be determined by monitoring by regulatory agencies. Transport, storage, and handling of construction-related hazardous materials shall be consistent with the guidelines provided by the California Department of Transportation, Los Angeles Regional Water Quality Control Board, the South Coast Air Quality Management District, and the Certified Unified Program Agency. Each agency shall regulate and enforce, through permitting and record keeping, the monitoring and enforcement of this mitigation measure.

Measure Hazards-11

To avoid impacts on the existing emergency response and evacuation plan, the City of Long Beach shall require the identification of an alternative emergency water supply source, evacuation routes, and emergency response vehicle routes during roadway realignment and upon expansion of the Miller Children's Hospital facility. The revised emergency response and evacuation plan shall be updated by the construction contractor prior to initiation of construction activities.

Measure Hazards-12

To avoid exposure to chemicals of potential concern (COPCs) in the soil, the Office of Statewide Health Planning and Development shall require that volatile organic compounds (VOCs) be monitored during excavation requested for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, in compliance with the South Coast Air Quality Management District Rule 1166 or Rule 1150, which sets requirements to control the emission of VOCs from excavating, grading, handling, and treating VOC-contaminated soil. The procedures for removing, handling, and disposing of petroleum hydrocarbon–contaminated soil and water shall include and require adherence to health and safety protocols (e.g., no eating in the construction zone, use of personal protective equipment) as provided in a site health and safety plan, as well as monitoring and control of emissions of COPCs that may occur during the construction work.

Measure Hazards-13

To avoid exposure to chemicals of potential concern (COPCs) in the soil, the City of Long Beach shall require that volatile organic compounds (VOCs) be monitored during excavation requested for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and Todd Cancer Institute Phases I and II, in compliance with the South Coast Air Quality Management District Rule 1166 or Rule 1150, which sets requirements to control the emission of VOCs from excavating, grading, handling, and treating VOC-contaminated soil. The procedures for removing, handling, and disposing of petroleum hydrocarbon–contaminated soil and water shall include and require adherence to health and safety protocols (e.g., no eating in the construction zone, use of personal protective equipment) as provided in a site health and safety plan, as well as monitoring and control of emissions of COPCs that may occur during the construction work.

Measure Hazards-14

At least 30 days prior to approval of final plans and specifications for the Miller Children's Hospital pediatric inpatient tower, central plant building, and utility trench, the Office of Statewide Health Planning and Development shall review and provide comments on the plans and specifications to ensure compliance with all requirements resulting from the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

Measure Hazards-15

Prior to approval of final plans and specifications for the Miller Children's Hospital link building and Todd Cancer Institute Phases I and II, the City of Long Beach shall review the plans and specifications to ensure compliance with all requirements resulting from the Voluntary Clean-up Agreement between the Long Beach Memorial Medical Center and the Department of Toxic Substances Control.

3.5.7 Level of Significance after Mitigation

Implementation of mitigation measures Hazards-1 through Hazards-15 would reduce potential impacts from hazards and hazardous materials to below the level of significance.

3.6 HYDROLOGY AND WATER QUALITY

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to hydrology and water quality. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to hydrology and water quality and to identify potential alternatives.

The analysis of hydrology and water quality includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. The potential for impacts to hydrology and water quality have been analyzed in accordance with the methodologies and information provided by the City of Long Beach General Plan,[2] the City of Long Beach Storm Water Management Plan,[3] the hydrology and water quality report that was prepared by Moffat and Nichol for the proposed project (Appendix H, *Hydrology and Water Quality*), and the Water Quality Control Plan for Los Angeles Region (4).[4]

3.6.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies that relate to hydrology and water quality and that must be considered by the City of Long Beach during the decision-making process for projects that involve the potential to result in significant impacts related to hydrology and water quality.

Federal

Section 401 of the Clean Water Act of 1972

The federal Clean Water Act (CWA)[5] of 1972 sets national goals and policies to eliminate discharge of water pollutants into navigable waters and to achieve a water quality level that will protect fish, shellfish, and wildlife while providing for recreation in and on the water whenever possible. The CWA regulates point-source and non-point-source discharges to receiving waters with the National Pollutant Discharge Elimination System (NPDES) program. The CWA provides for delegating certain responsibilities for water quality control and planning to the states. The State of California

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at http://www.lbstormwater.org/plan/

[4] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Contact: 320 West Fourth Street, Suite 200, Los Angeles, CA 90013.

[5] Office of the Law Revision Counsel. 2 January 2002. 33 U.S. Code, §1341: "Certification." Available at: http://uscode.house.gov

has been authorized by the U.S. Environmental Protection Agency (EPA) to administer and enforce portions of the CWA, including the NPDES program. California issues NPDES permits through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The Long Beach Memorial Medical Center campus (Campus) is subject to the regulatory activity of the Los Angeles RWQCB.

In 1987, the CWA was amended to state that the discharge of pollutants to waters of the United States from storm water is effectively prohibited, unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) and established a framework for regulating industrial, municipal, and construction storm water discharges under the NPDES program. The 1987 amendment was developed from the awareness that storm water runoff, a non-point-source discharge, is a significant source of water pollution. In 1990, the U.S. EPA published final regulations that established application requirements to determine when industrial, municipal, and construction activities require an NPDES permit.

On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182 (Permit). This order is the NPDES permit (NPDES CAS004001) for municipal storm water and urban runoff discharges within the County of Los Angeles.

As adopted on December 13, 2001, the requirements of the Permit covers 84 cities and the unincorporated areas of the County of Los Angeles, with the exception of the portion of County of Los Angeles in the Antelope Valley, including the Cities of Lancaster and Palmdale, as well as the City of Long Beach and the City of Avalon. Under the Permit, the County of Los Angeles Flood Control District is designated as the Principal Permittee; the County of Los Angeles along with the 84 incorporated cities are designated as Permittees. The Principal Permittee coordinates and facilitates activities necessary to comply with the requirements of the permit, but is not responsible for ensuring compliance of any of the Permittees.

In compliance with the Permit, the Permittees have implemented a Storm Water Quality Management Plan (SWQMP), with the ultimate goal of accomplishing the requirements of the Permit and reducing the amount of pollutants in storm water and urban runoff. The SWQMP is divided into six separate programs, as outlined in the Permit. These programs are as follows:

1. Public Information and Participation
2. Industrial/Commercial Facilities
3. Development Planning
4. Development Construction
5. Public Agency Activities
6. Illicit Connection/Illicit Discharge

Each Permittee is required by the Permit to have implemented these programs by February 1, 2002.

General Construction Activity Storm Water Discharges

Storm water discharges that are composed entirely of runoff from qualifying construction activities may be eligible to be regulated under the general construction activity storm water permit issued by the SWRCB rather than an individual NPDES permit issued by the appropriate RWQCB. Construction activities that qualify include clearing, grading, excavation, reconstruction, and dredge-and-fill activities that result in the disturbance of at least 5 acres of total land area. The

proposed project would be required to conform to the Standard Urban Storm Water Management Plan (SUSMP) as part of compliance with the general construction activity storm water permit to reduce water quality impacts to the maximum extent practicable. A SUSMP is a report that includes one or more site maps, an identification of construction activities that could cause pollutants to enter the storm water, and a description of measures or best management practices (BMPs) to control these pollutants to the maximum extent practicable. A BMP is defined by the Storm Water Quality Task Force as any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces storm water pollution.

Executive Order 11988

The objective of Executive Order 11988, dated May 24, 1977, is the avoidance of, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of the base floodplain (100-year floodplain) and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practicable alternative. Under Executive Order 11988, the U.S. Army Corps of Engineers (USACOE) must provide leadership and take the following action:

- Avoid development in the base floodplain unless it is the only practicable alternative.
- Reduce the hazard and risk associated with floods.
- Minimize the impact of floods to human safety, health, and welfare.
- Restore and preserve the natural and beneficial values of the base floodplain.

The proposed project would be subject to Executive Order 11988 if it would result in adverse impacts to the 100-year floodplain.

Regional

Water Quality Control Plan for the Los Angeles Region

The federal CWA is administered and enforced by the SWRCB, which develops regulations to implement water quality control programs mandated at the federal and state levels.

The Los Angeles RWQCB has prepared a Water Quality Control Plan for the Los Angeles Region, which includes the coastal watersheds of Los Angeles and Ventura Counties. The first essentially complete Water Quality Control Plan, which was established under the requirements of California's Porter-Cologne Water Quality Control Act,[6] was adopted in 1975 and revised in 1984. The most recent version of the Water Quality Control Plan was adopted in 1994.[7]

The Water Quality Control Plan assigned beneficial uses to surface and groundwater such as municipal water supply and water-contact recreation to all waters in the Los Angeles Basin (Basin). It also set water quality objectives, subject to approval by the U.S. EPA, intended to protect designated beneficial uses. These objectives apply to specific parameters (numeric objectives) and

[6] State of California. 1969. Porter-Cologne Water Quality Control Act. California Water Code, Section 13000 et seq.: "Water Quality." Available at: http://www.ceres.ca.gov/index.html

[7] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Contact: 320 West Fourth Street, Suite 200, Los Angeles, CA 90013.

general characteristics of the water body (narrative objectives). An example of a narrative objective is the requirement that all waters must remain free of toxic substances in concentrations producing detrimental effects on aquatic organisms. Numeric objectives specify concentrations of pollutants that are not to be exceeded in ambient waters of the Basin.

Local

City of Long Beach General Plan

The City of Long Beach General Plan[8] includes the following water resource management goals related to the proposed project:

- Ensure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City of Long Beach.

- Enforce existing ordinances and develop new ordinances and promote the continuing research directed toward achieving the required stringent water quality standards that regulate wastewater effluent discharge to oceans, bays and estuaries, and freshwater and groundwater.

City of Long Beach Storm Water Management Plan

The objective of the federal CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges from municipal separate storm sewers (MS4s) to waters of the United States. Section 402(p)(3)(B) requires the following for MS4 permits:

> (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

The City of Long Beach is fully implementing the Long Beach Storm Water Management Program (LBSWMP) to meet the objectives of effectively prohibiting non-storm water discharges and reducing the discharge of pollutants to the maximum extent practicable such that these discharges will not adversely impact the beneficial uses of the City's receiving waters. Essentially, the City's ultimate objective is to comply with the federal CWA and the state Porter-Cologne Water Quality Control Act.

[8] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

The LBSWMP is a comprehensive program containing several elements, practices, and activities aimed at reducing or eliminating pollutants in storm water to the maximum extent practicable. The programs that are relevant to the proposed project that contribute toward preventing and mitigating storm water pollution include the following:

- Street maintenance, which consists of the following elements: street sweeping, sidewalk and alley cleaning, and maintenance operations
- Sewage systems operations and maintenance
- Storm drain systems operation and maintenance
- Municipal facilities maintenance
- Public construction activities
- Landscaping maintenance

The LBSWMP also addresses the planning of development projects and construction of projects not within the public street right-of-ways.

3.6.2 Existing Conditions

The existing conditions for hydrology and water quality for the proposed project areas are described in relation to drainage, surface water quality, groundwater, floodings and 100-year flood zone, and relative risk of the site for seiche, tsunamis, and mudflows. In the consideration of the existing conditions for hydrology and water quality, the proposed project site was evaluated in the context of the regional watershed, Campus site plan, and specific characteristics of proposed developments within the existing Campus. The Campus is located in the southern portion of the Los Angeles River Watershed, approximately 1 mile west of the Los Angeles Rivers, several miles north of its outfall to the Pacific Ocean (Figure 3.6.2-1, *Regional Hydrogeomorphic Features*).

Drainage

The City of Long Beach is divided into 30 major drainage basins. Within each drainage basin, there are sub-basins for major drains 36 inches in diameter or greater that have their outfall to a regional drain, regional retention basin, or the Long Beach Harbor. The proposed project is located in Drainage Basin 6 (Figure 3.6.2-2, *Drainage Basin 6*).[9] Basin 6 is 695 acres and is made up of 475 acres residential, 125 acres commercial, 73 acres institutional, and 17 acres of open space. It is located in the west central portion of the City of Long Beach just east of the Los Angeles River. The extreme eastern portion of Basin 6 lies within the City of Signal Hill. It is bound on the north, south, east and west by West Wardlow, Eagle Street, California Avenue, and the Los Angeles River, respectively.

The drainage pattern is to the south and southeast. There are two major storm drain systems that have a total of five major lines contributing runoff. One major system drains the western portion of Basin 6, and the other drains the eastern portion. The two systems converge at San Francisco Avenue just north of Willow Street and outfall into the Los Angeles River through the Willow Pump Station. This station is owned by the City of Long Beach and has a maximum operating capacity of 466 cubic feet per second (CFS). There is a split flow at 25th Street and Long Beach Boulevard, a 48-inch pipe that remains in Basin 6 and a 36-inch pipe that takes flow into Basin 5.

[9] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at http://www.lbstormwater.org/plan/

FIGURE 3.6.2-1
Regional Hydrogeomorphic Features

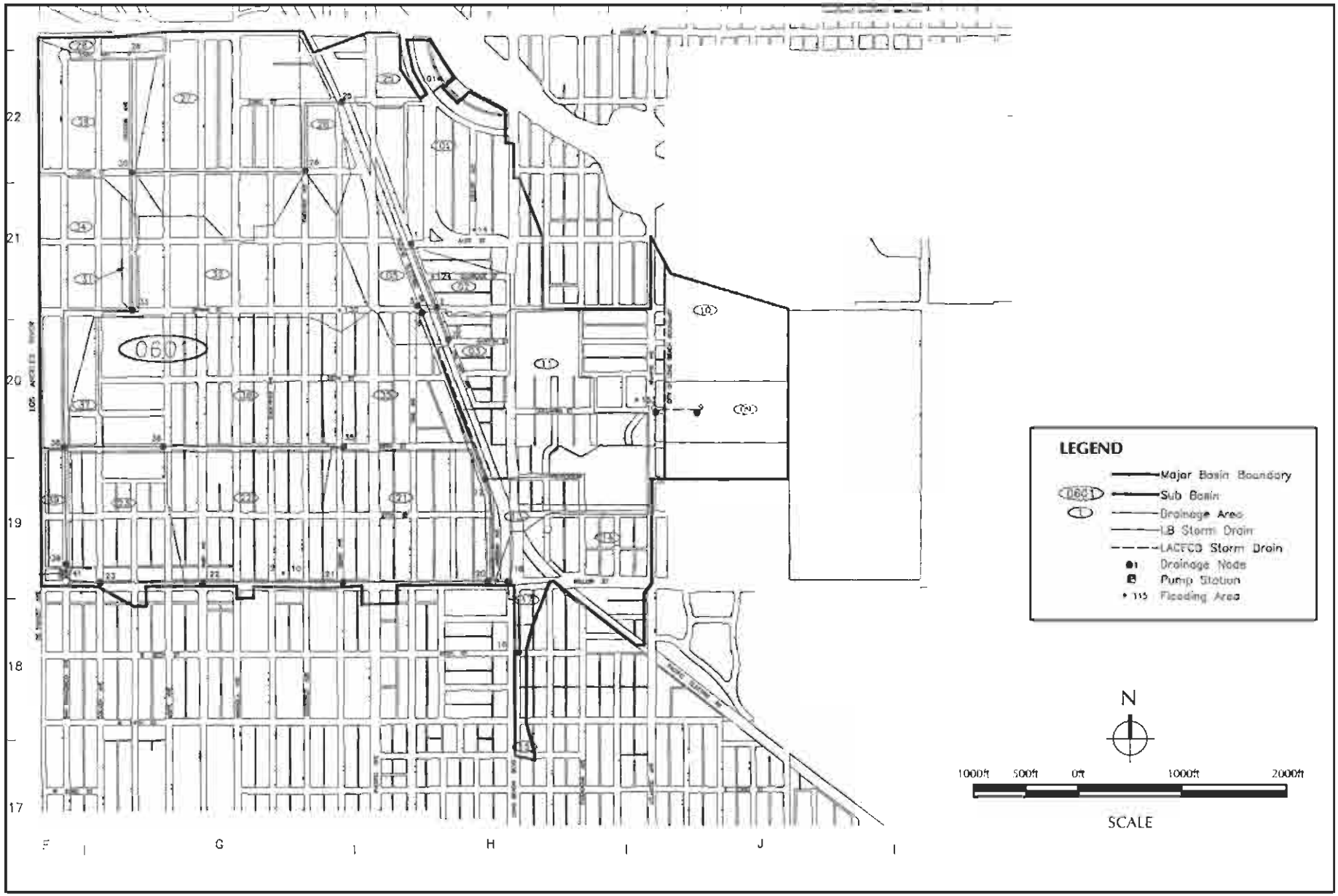


FIGURE 3.6.2-2
Drainage Basin 6

Storm water runoff from areas east of Atlantic Avenue and areas north of Spring Street are conveyed to a 54-inch storm drain that traverses east-west through the hospital site (Figure 3.6.2-3, *Storm Drain System*). The 54-inch storm drain joins a 90-inch storm drain located at the west side of the railroad tracks, which conveys the storm water to a storm water pump station at the Los Angeles River. The pump station is located at the west side of the railroad tracks, which leads the storm water toward the Los Angeles River. The hydrologic calculations utilized the maximum allowable time of concentration for developed areas. The calculation shows that the 54-inch storm drain is capable of collecting storm water runoff from the upstream area. Thus, the Campus is not susceptible to flooding regardless of development within or surrounding the hospital site.

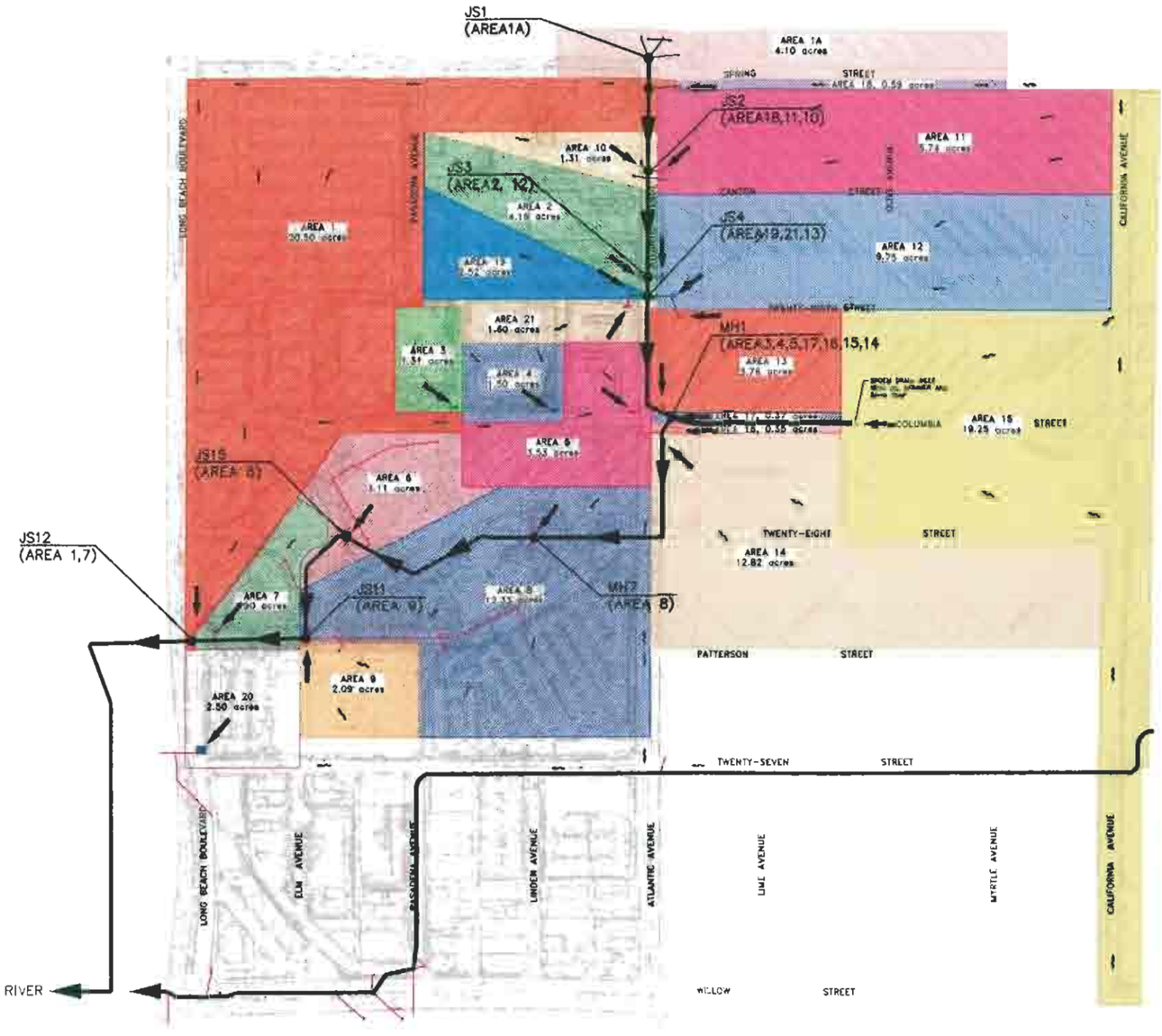
The elevation of the proposed project site ranges from 19 feet above mean sea level (MSL) to approximately 67 feet above MSL. Currently, site drainage is directed to adjacent streets following the natural topography of the existing land. Street flow is directed to existing storm drains. A separate 54-inch storm drain intercepts storm water from the area east of California Avenue at 27th Street and conveys the storm water westerly to the Los Angeles River. This regional storm drain system is sized in a manner to handle the storm water flows from the upstream surrounding areas. East of Atlantic Avenue and Columbia Street is a collection point of storm water, and a 54-inch reinforced-concrete pipe storm drain diverts the water from the area south of Atlantic Avenue to west of 28th Street into the area of the Campus west of Patterson Street. There are existing 12-, 15-, 18-, and 21-inch storm drain lines located in Willow Street (Figure 3.6.2-3). The proposed improvements do not have a component that would otherwise increase storm water runoff beyond normal rainfall amounts, as it is in the existing condition. Further analysis of storm water is not warranted.

Surface Water Quality

Surface water quality in the proposed project area has been affected in a way that is consistent with the urban development that has occurred. Non-point-source pollution from urban impervious surfaces (parking lots, roadways, sidewalks, rooftops, etc.) is a major contributor to the impairment of streams and waterways. Impervious surfaces contribute grease, oil, antifreeze, and other vehicle emissions, as well as heavy metals from brake dust, litter, and other debris and pathogens into water systems. Landscaped areas contribute pesticides, fertilizers, and other landscape waste into the water system. The sites within the Campus identified for the development of the proposed project elements are characterized by impervious surfaces.

Groundwater

Groundwater has been encountered at depths of 40 to 50 feet below ground surface in the proposed project area. The existing impervious surface at the proposed development locations within the Campus prevents groundwater recharge (Table 3.6.4-1, *Impervious Surfaces*).



SUB AREA	AREA (AC)	Q_{10} (CFS)
1A	4.10	8.28
1	20.48	25.08
2	4.16	6.52
3	1.31	2.88
4	1.50	3.30
5	3.53	6.22
6	3.11	6.28
7	1.53	3.57
8	12.33	19.31
9	2.09	4.22
10	1.31	2.46
11	8.64	13.00
12	9.75	14.07
13	3.76	7.06
14	12.82	17.15
15	19.25	20.6
16	0.35	0.62
17	0.37	0.65
18	0.59	0.97
19	2.52	3.95
20	–	–
21	1.60	3.00

DETENSION BASIN

FIGURE 3.6.2-3
Storm Drain System

TABLE 3.6.4-1
IMPERVIOUS SURFACES

Proposed Project Element	Existing Condition
Todd Cancer Institute Phases I and II	Parking lot
Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench; and central plant building	Parking lot, 86-car parking structure, Patterson Street, WIC building
Miller Children's Hospital pediatric outpatient building	Parking lot, hospital driveway, Patterson Street
Miller Children's Hospital link building	Hardscape / parking lot
Roadway realignment	Parking lot
Parking areas	Buildings, parking areas

The proposed developed locations within the Campus are not designed as current recharge facilities for groundwater basin by Metropolitan Water District of Southern California.[10]

Floodways and 100-Year Flood Zone

The proposed project area is neither located within a flood hazard area or a 100-year flood zone[11,12] nor located within the potential flood zone of any levees or dams. The Los Angeles River is located approximately 1 mile west of the proposed project site and is the nearest flood control facility.[13] The Los Angeles River provides a 100-year level of protection to adjacent land uses from a 100-year flood event.

Seiches, Tsunamis, and Mudflows

Seiches and tsunamis are the result of tectonic activity, such as an earthquake. A seiche is an oscillation of the surface of a landlocked body of water that can create a hazard to persons and structures on and in the vicinity of the water. A review of the U.S. Geological Survey 7.5-minute series Long Beach topographic quadrangle[14] indicated that the Los Angeles River located 1 mile to the west and an urban reservoir located approximately 1.5 miles to the east are the nearest landlocked water bodies. These man-made structures have been designed in accordance with applicable state and local statutes and regulations and do not represent a threat to the proposed project area. A tsunami is a long-period, high-velocity tidal surge that can result in a series of very low (trough) and high (peak) sea levels, with the potential to inundate areas up to several miles

[10] Metropolitan Water District of Southern California. November 1990. *The Regional Urban Water Management Plan for the Metropolitan Water District of Southern California*. Contact: 1111 Sunset Boulevard, P.O. Box 54153, Los Angeles, CA 90054.

[11] Federal Emergency Management Agency. 1996. "Compliant Metadata for Q3 Flood Data Coverage for Los Angeles, California." Contact: Federal Emergency Management Agency, 500 C Street, SW Washington, DC 20472.

[12] City of Long Beach, Department of Planning and Building. July 1991. "Flood Hazard Areas Map" in *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[13] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

[14] U.S. Geological Survey. Photorevised 1981 (1964). Long Beach, California, 7.5-Minute Series Topographic Quadrangle. (Scale = 1:24,000.) Contact: U.S. Geological Survey National Center, 12201 Sunrise Valley Drive, Reston, VA 20192.

from the coast, creating hazards to people or structures from loss, injury, or death. Most of the hazards created by a tsunami come when a trough follows the peak, resulting in a rush of sea water back into the ocean. A mudflow is a moving mass of soil that is made fluid by a loss of shear strength, generally as a result of saturation from rain or melting snow. The proposed project site is approximately 3.5 miles northeast of the Pacific Ocean at elevations between approximately 19 and 67 feet above MSL and is therefore not susceptible to tsunamis. The proposed project site is located in an area of relatively low relief that does not create the potential for mudflows.

3.6.3 Significance Thresholds

The potential for the proposed project to result in impacts to hydrology and water quality was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines. A project would normally be considered to have a significant impact to hydrology and water quality when the potential for any one of the following 10 thresholds occurs:

- Violation of any water quality standards or waste discharge requirements
- Substantial depletion of groundwater supplies or interference with groundwater recharge, leading to a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)
- Substantial alteration of the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation either on site or off site
- Substantial alteration of the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or substantial increase in the rate or amount of surface runoff in a manner that would result in flooding either on site or off site
- Creation or contribution of runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff
- Substantial degradation of water quality
- Placement of housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map
- Placement of structures within a 100-year flood hazard area that would impede or redirect flood flows
- Exposure of people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
- Inundation by seiche, tsunami, or mudflow

3.6.4 Impact Analysis

Drainage

The hydrology report (Appendix H) prepared for the proposed Master Plan of Land Uses and six construction elements of the proposed project demonstrate that the existing storm drain system has adequate capacity to support the proposed Campus improvements. Because the existing Campus is characterized by impervious surfaces, the replacement of existing impervious surfaces with new impervious surfaces would not be expected to increase the volume of storm water runoff. The regional storm drain system is sized in a manner to handle the storm water flows from surrounding areas, accounting for numerous acres of land area that feed into the local storm drain system. The proposed improvements do not carry a component that would otherwise increase storm water runoff beyond normal rainfall amounts, as it is in the existing condition. Therefore, the hydrology and storm water drainage conditions that would result from the proposed project will be the same as the existing conditions and the drainage will follow a similar pattern with similar velocities and quantities.

Vehicular and pedestrian circulation patterns would be improved through the realignment of selected internal roadways and a Wayfinding and Signage Plan. Specifically, a 520-linear-foot section of the alignment of Patterson Street/Memorial Medical Center Drive as it extends through the Campus would be realigned southward by approximately 300 feet from its current intersection at Atlantic Avenue, near 28th Street on the east side of the Campus, to make a closer connection with the existing alignment of Patterson Street at Atlantic Avenue. As a result, the intersection of Atlantic Avenue and 28th Street would become a T-intersection. The roadway would consist of three site entry lanes and three site exit lanes, with an automated traffic control gate for each lane. The present roadway is approximately 85 feet wide at Atlantic Avenue. The roadway would narrow to 40 feet where it transitions to the existing Patterson Street near Pasadena Avenue. The planned street realignment must be designed to meet existing grades along the edge of existing development. Implementation of this design would result in overall street grades and drainage patterns that are subsequently similar to existing conditions. Therefore, the hydrology and storm water drainage conditions that result from the proposed project would be substantially the same as existing conditions. The drainage would continue to follow a similar pattern, with similar velocities and quantities.

The planned roadway realignment would require some realignment of storm water drainage facilities. The hydrology of the proposed project site would not be altered to the point that an impact would occur at the time of concentration for storm water runoff; therefore, the peak flow rate of runoff would not deviate from existing conditions.

Surface Water Quality

The primary objectives of the 1987 amendments to the CWA that established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES include the following:

- Effectively prohibit non-storm water discharges
- Reduce the discharge of pollutants from storm water conveyance systems to the maximum extent practicable

Water quality impacts may occur during construction and operation of the proposed project. To minimize water quality impacts, the proposed project must implement measures that would minimize the discharge of pollutants of concern to the storm drain system. Pollutants of concern consist of any pollutants that exhibit one or more of the following characteristics:

- Current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water.

- Elevated levels of the pollutant are found in sediments of receiving water and/or have the potential to bioaccumulate in organisms therein.

- The detectable inputs of the pollutant are at a concentrations or loads considered to be potentially toxic to humans and/or flora and fauna.

However, it is possible that a combination of BMPs not so designated may, in a particular circumstance, be better suited to maximize the reduction of the pollutants. Implementation of temporary measures must occur during construction of the proposed project, and permanent storm water quality management measures must be implemented in the project design. In conjunction with preparation of the project construction documents, the design engineer should incorporate permanent BMPs into the proposed project.

As a part of the NPDES permit issued to Los Angeles County by the RWQCB, the LBSWMP requires new developments to meet the permit requirements through a SUSMP. The proposed project falls into the category of projects requiring a SUSMP and overall compliance with the NPDES permit programs. The SUSMP outlines the planned activities and structures, or BMPs, to reduce or eliminate non-storm discharges to the storm water system. These requirements meet the water quality standards as set forth by the presiding agencies and address storm runoff quantity and flow rate, suspended solids (primarily from erosion), and contaminants such as phosphorus (primarily from landscaping) and hydrocarbons (primarily from automobiles). Therefore, the proposed project, through the development of a SUSMP, would incorporate BMPs that would effectively reduce or eliminate the discharge of total suspended solids (TSS), or suspended sediment, off site. Currently, BMPs are not incorporated on the proposed project site, so providing the BMPs in the new development would actually enhance the water quality discharged from the proposed project site. To implement these requirements, the proposed project would prepare a Local Storm Water Pollution Prevention Plan. If construction occurs between October 1 of one year and April 15 of the following year, a Wet Weather Erosion Control Plan must also be prepared and implemented by the contractor.

Operation of the proposed project would not have an adverse effect on the storm water runoff. The proposed structures and surrounding features replace a nearly impervious surface, thereby increasing (or maintaining) the current infiltration rate of storm water and attenuating the peak discharge rate of the proposed project site to the surrounding environment. In addition, through the proper design of landscape features and site grading, as well as implementation of structural BMPs, the site would effectively treat the runoff to a higher quality than what is currently discharged.

The City of Long Beach currently has a street sweeping program that would remove miscellaneous trash debris and sediment that may accumulate in street gutters.

Groundwater

Construction and operation of the proposed project would not interfere with groundwater recharge or reduce groundwater supplies. The proposed project and surrounding features replace a nearly impervious surface. Section 3.4, Geology and Soils, provides a detailed discussion of the potential for liquefaction and subsurface drainage, where necessary, to prevent near-surface soil saturation.

100-Year Flood Zone

As discussed under Section 3.6.2, Existing Conditions, the proposed project is not within a designated floodplain management area.[15] Furthermore, the proposed project is located west of (and not in) the potential inundation area from a catastrophic failure at Sepulveda Dam in the San Fernando Valley. Therefore, implementation of the proposed project would not result in direct or indirect impacts related to the placement of housing or other structures within the 100-year flood hazard area or floodplain management area, or expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Seiche, Tsunamis, and Mudflows

Implementation of the proposed project would not result in inundation by a seiche, tsunami, or mudflow.

Due to the sufficient elevation of the proposed project area and the distance from the ocean and other bodies of water, there would be no direct or indirect impacts related to seiches or tsunamis. The low relief of the proposed project area does not contribute to the risk for earthquake-related ground failures that would result in mudflows; therefore, there would be no direct or indirect impacts.

3.6.5 Cumulative Impacts

The incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects (Section 2, Table 2.6-1, *List of Related Projects*), would not cause a significant cumulative impact to hydrology and water quality. The proposed project would not impact groundwater recharge because there is no net increase in impervious surfaces from that of the existing conditions; therefore, the implementation of the proposed project would not cumulatively impact groundwater levels and quality when analyzed with the other projects in the area, both related and unrelated. The proposed project would include the incorporation of BMPs for sediment and erosion control during construction and, therefore, would not cause a significant impact on surface water quality and erosion. Therefore, implementation of the proposed project would not cause an incremental impact when considered with the related past, present, or reasonably foreseeable, probable future project.

[15] County of Los Angeles, Department of Regional Planning. 1993. *Streamlined County of Los Angeles General Plan*. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

3.6.6 Mitigation Measures

Measure Hydro-1

The Office of Statewide Health Planning and Development (OSHPD) shall require the construction contractor to avoid erosion, transport of pollutants, and siltation during construction of the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building. Prior to final grading plans, the OSHPD shall ensure that the plans and specifications require the construction contractor to comply with the revised General Construction Activity Storm Water Permit. Such compliance measures would, at a minimum, include the preparation of a Notice of Intent and the implementation of a Local Storm Water Pollution Prevention Plan (SWPPP) and a Wet Season Erosion Control Plan (for work between October 15 and April 15). These plans shall incorporate all applicable best management practices (BMPs), as described in the California Storm Water Best Management Practice Handbook, Construction Activity, into the construction phase of the proposed project. Prior to construction, temporary measures must be implemented to prevent transport of Pollutants of Concern from the construction site to the storm drainage system. The BMPs shall apply to both the actual work areas and contractor staging areas. Selection of construction-related BMPs would be in accordance with the requirements of the City of Long Beach Storm Water Program, Development Best Management Practices Handbook.

Measure Hydro-2

The City of Long Beach Department of Public Works shall require the construction contractor to avoid erosion, transport of pollutants, and siltation during construction of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas. Prior to final grading plans, the City of Long Beach Department of Public Works shall ensure that the plans and specifications require the construction contractor to comply with the revised General Construction Activity Storm Water Permit. Such compliance measures would, at a minimum, include the preparation of a Notice of Intent and the implementation of a Local Storm Water Pollution Prevention Plan (SWPPP) and a Wet Season Erosion Control Plan (for work between October 15 and April 15). These plans shall incorporate all applicable best management practices (BMPs), as described in the California Storm Water Best Management Practice Handbook, Construction Activity, into the construction phase of the proposed project. Prior to construction, temporary measures must be implemented to prevent transport of Pollutants of Concern from the construction site to the storm drainage system. The BMPs shall apply to both the actual work areas and contractor staging areas. Selection of construction-related BMPs would be in accordance with the requirements of the City of Long Beach Storm Water Program, Development Best Management Practices Handbook.

Measure Hydro-3

Prior to final grading plans for the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building, the Office of Statewide Health Planning and Development shall review the final grading plans to ensure that the plans and specifications require the construction contractor to prepare a Standard Urban Storm Water Management Plan (SUSMP) for construction activities and to implement best management practices (BMPs) for construction, materials, and waste-handling activities, which include the following:

- Schedule excavation, grading, and paving activities for dry weather periods.
- Control the amount of runoff crossing the construction site by means of berms and drainage ditches to divert water flow around the site.
- Identify potential pollution sources from materials and wastes that will be used, stored, or disposed of on the job site.
- Inform contractors and subcontractors about the clean storm water requirements and enforce their responsibilities in pollution prevention.

The construction contractor shall incorporate SUSMP requirements and BMPs to mitigate storm water runoff that include, but are not limited to, the following:

- The incorporation of bioretention facilities located within the proposed project area
- The incorporation of catch basin filtration systems
- The use of porous pavements to reduce runoff volume

Measure Hydro-4

Prior to final grading plans for the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas, the City of Long Beach Department of Public Works shall review the final grading plans to ensure that the plans and specifications require the construction contractor to prepare a Standard Urban Storm Water Management Plan (SUSMP) for construction activities and to implement best management practices (BMPs) for construction, materials, and waste-handling activities, which include the following:

- Schedule excavation, grading, and paving activities for dry weather periods.
- Control the amount of runoff crossing the construction site by means of berms and drainage ditches to divert water flow around the site.
- Identify potential pollution sources from materials and wastes that will be used, stored, or disposed of on the job site.
- Inform contractors and subcontractors about the clean storm water requirements and enforce their responsibilities in pollution prevention.

The construction contractor shall incorporate SUSMP requirements and BMPs to mitigate storm water runoff that include, but are not limited to, the following:

- The incorporation of bioretention facilities located within the proposed project area
- The incorporation of catch basin filtration systems
- The use of porous pavements to reduce runoff volume

Measure Hydro-5

The Office of Statewide Health Planning and Development (OSHPD) shall require the construction contractor to undertake daily street sweeping and trash removal throughout the construction of the Miller Children's Hospital pediatric inpatient tower Phases I and II, utility trench, and central plant building. The purpose of the street sweeping and trash removal shall be to avoid degradation of water quality. Prior to the completion of final plans and specifications, the OSHPD shall review the plans and specifications to ensure that the construction documents include a requirement that the construction contractor provide daily street sweeping and trash removal to prevent degradation of water quality.

Measure Hydro-6

The City of Long Beach Department of Public Works shall require the construction contractor to undertake daily street sweeping and trash removal throughout the construction of the Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, Todd Cancer Institute Phases I and II, roadway realignment, and parking areas. The purpose of the street sweeping and trash removal shall be to avoid degradation of water quality. Prior to the completion of final plans and specifications, the City of Long Beach Department of Public Works shall review the plans and specifications for the proposed project to ensure that the construction documents include a requirement that the construction contractor provide daily street sweeping and trash removal to prevent degradation of water quality.

Measure Hydro-7

Potential impacts to hydrology and water quality related to the degradation of water quality during construction of the proposed project shall be reduced to below the level of significance through the requirement to conduct a detailed hydrology study based on the final site plans and to implement the recommendations, or comparable measures, into the plans and specifications for each proposed project element prior to final approval by the City of Long Beach Department of Public Works. The hydrology study shall be prepared by a certified civil engineer, and a draft report, including recommendations, shall be submitted to the City of Long Beach Department of Public Works for review. The City of Long Beach Department of Public Works shall provide comments, if any, within 14 days of receiving the draft hydrology study. Monitoring and enforcement shall be the responsibility of the City of Long Beach Department of Public Works.

3.6.7 Level of Significance after Mitigation

Implementation of mitigation measures Hydro-1 through Hydro-7 would be expected to reduce potential impacts to hydrology and water quality to below the level of significance.

3.7 LAND USE AND PLANNING

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to land use and planning. Therefore, this issue is being carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to land use and planning and to identify potential alternatives.

The analysis of land use and planning includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Land use and planning at the proposed project site were evaluated with regard to state, regional, and local data and forecasts for land use and planning; the City of Long Beach General Plan;[2] the City of Long Beach Municipal Code;[3] and the California Health and Safety Code.[4]

3.7.1 Regulatory Framework

The proposed project site lies within the primary land use jurisdiction of the City of Long Beach. The proposed project is required to comply with the City of Long Beach land use policies, ordinances, and regulations. The proposed project is subject to the City of Long Beach General Plan and the City of Long Beach Municipal Code. The proposed project must also comply with the California Health and Safety Code. The analysis of conformity to State of California and City of Long Beach land use and planning standards allows the EIR to fulfill its intended purpose as an informational document.

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

[4] State of California. 1994. California Health and Safety Code. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/chapter21-10.htm

State

California Health and Safety Code

California Health and Safety Code Section 130005 directs the Office of Statewide Health Planning and Development (OSHPD) to develop definitions of earthquake performance categories. Senate Bill 1953[5] is an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983. The following goal and policy relate to land use and planning in the proposed project area:

Goal: Emergency regulations

Policy: To promote general acute care hospital buildings that are not only capable of remaining intact after a seismic event but also capable of continued operation and provision of acute care medical services after a seismic event

Local

City of Long Beach General Plan

The Land Use element of the City of Long Beach General Plan[6] provides the following goal relate to land use and planning in the proposed project area:

Goal: Quality Services: Long Beach will emphasize quality in the provision of services to its residents and businesses, and will strive to make public services readily accessible to all citizens.

City of Long Beach Land Use Designations and Municipal Code

The various requirements for zoning are provided in the City of Long Beach Municipal Code.[7]

3.7.2 Existing Conditions

Existing Land Use

The proposed project is located within the existing boundaries of the Long Beach Memorial Medical Center campus (Campus) and addresses proposed master planning for land uses up to year 2020 and the development of six proposed project elements, within the approximately 54-acre Campus located in the City of Long Beach, County of Los Angeles, California (see Section 2, *Project Description*, Figure 2.1-1, *Regional Vicinity*). The existing land uses include two licensed hospitals within the Campus: the Long Beach Memorial Medical Center (LBMMC) and Miller Children's Hospital (MCH) and related facilities and infrastructure. The Campus is completely developed and is characterized by six general

[5] Office of Statewide Health Planning and Development. 1994. Senate Bill 1953, Chapter 740, Amendment to the Alfred E. Alquist Hospital Seismic Safety Act of 1983, Sections 130000 through 130070. Available at: http://www.oshpd.cahwnet.gov/SB1953/index.htm

[6] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[7] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

land uses: (1) inpatient medical facilities, (2) outpatient medical facilities, (3) mixed-use facilities, (4) utilities, (5) circulation, and (6) parking (see Section 2, Figure 2.2-1, *Existing Conditions*, and Figure 2.2-2, *Site Photographs*). There are approximately 1,213,945 gross square feet of structures located within the Campus (see Section 2, Table 2.2-2, *Existing Conditions: Gross Floor Areas*).[8] The two hospitals are centrally located on the Campus, north of 27th Street, east of Long Beach Boulevard, south of Columbia Street, and west of Atlantic Avenue. Inpatient services are provided at both hospitals. Outpatient services are provided in structures located north and south of LBMMC and MCH. There are a variety of mixed uses housed in structures located south of 27th Street, including a research building, a medical office building, a guest residence, nutrition programs, and outpatient clinics. There are also 51 residential units located south of 27th Street. A child care center is located north of 27th Street. Approximately 1.93 acres are dedicated to circulation within the Campus, not including public right-of-ways. There are a total of 3,452 parking spaces located in 11 locations throughout the Campus, including 259 surplus parking spaces (see Section 2, Figure 2.2-1; Figure 2.2-3, *Existing Parking*; and Table 2.2-3, *Existing Parking*).

The City of Long Beach General Plan Land Use element[9] designates the Campus Land Use Designation (LUD) No. 7 Mixed-Use District (Figure 3.7.2-1, *General Plan Land Use Designations*). This district provides for large, vital activity centers, such as medical facilities, which by their nature involve mixed uses. The Campus also lies within the Central Long Beach Redevelopment Area.

According to the City of Long Beach Municipal Code,[10] there are currently four zoning designations within the Campus (Figure 3.7.2-2, *Existing Zoning Districts*). Approximately one-third of the Campus, located between 29th Street and 27th Street is zoned Institutional (I). The principal permitted use of the Institutional designation is that of a public or institutional nature, including hospitals, medical centers, medical office complexes, convalescent hospitals, parking, schools, social service office of nonprofit organizations, and special group residences. The portions of the Campus between 29th Street and Spring Street are zoned as Planned Development (PD-29; Long Beach Boulevard Planned Development) and Regional Highway (CHW) Districts. The PD District was established to allow flexible development plans to be prepared for areas of the City of Long Beach that may benefit from the formal recognition of unique or special land use and the definition of special design policies and standards not otherwise possible under conventional zoning district regulations. The CHW District is a commercial use district for mixed-scale commercial uses along major arterial streets and regional traffic corridors. The portions of the Campus between 27th Street and Willow Street are zoned as CHW and Community Automobile-Oriented (CCA) Districts.[11] The CCA District permits retail and service uses for an entire community, including convenience and comparison shopping goods and associated services.

Adjacent Land Uses and Land Use Compatibility

Oil production facilities and residential uses are located to the north of the proposed project site (Figure 3.7.2-3, *Immediate Vicinity of the Long Beach Memorial Medical Center*). The Atlantic and

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[8] Marie Campbell, *Personal Communication*, 9 August 2004. Pat Johner, Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90806-1737.

[9] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[10] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

[11] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

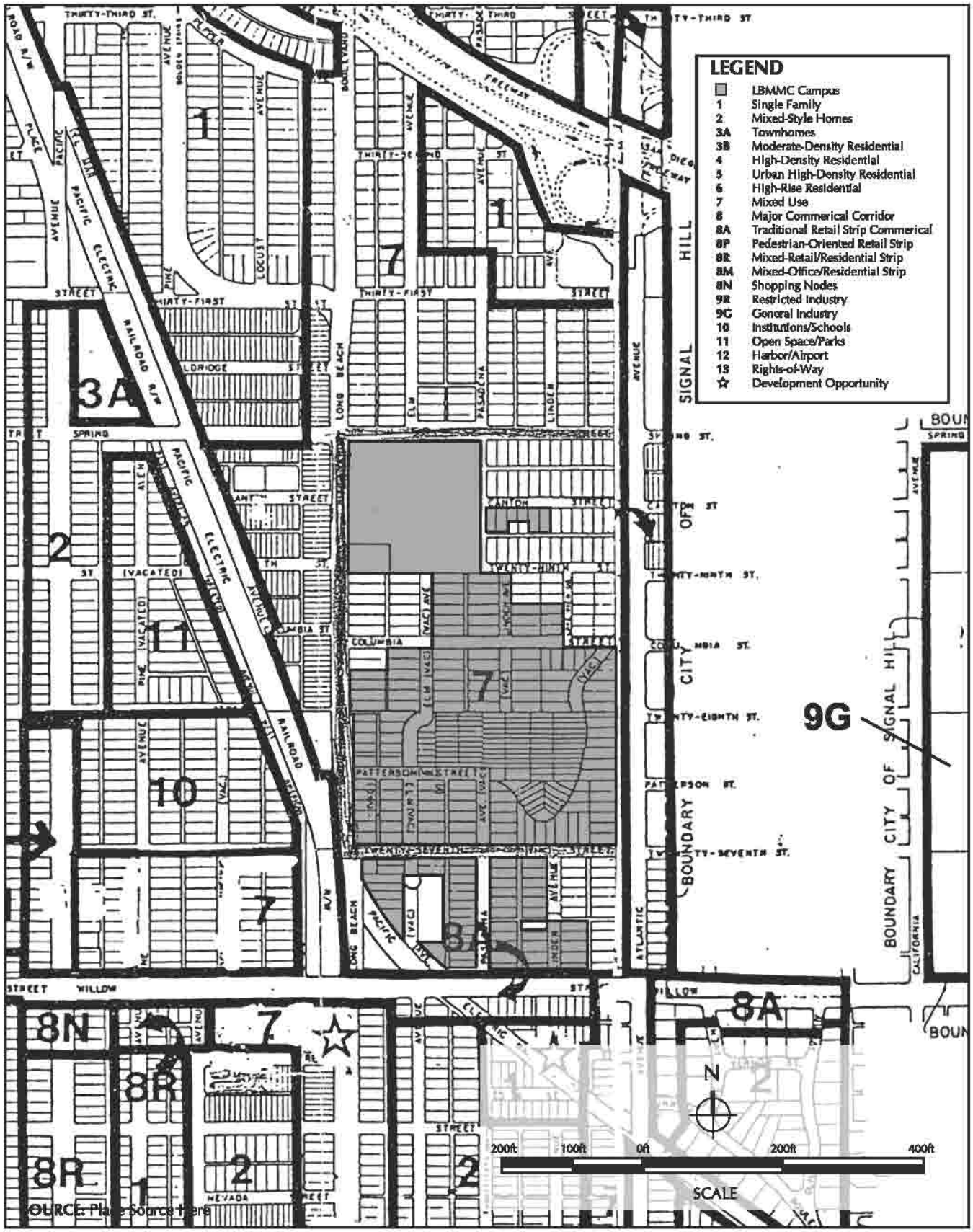
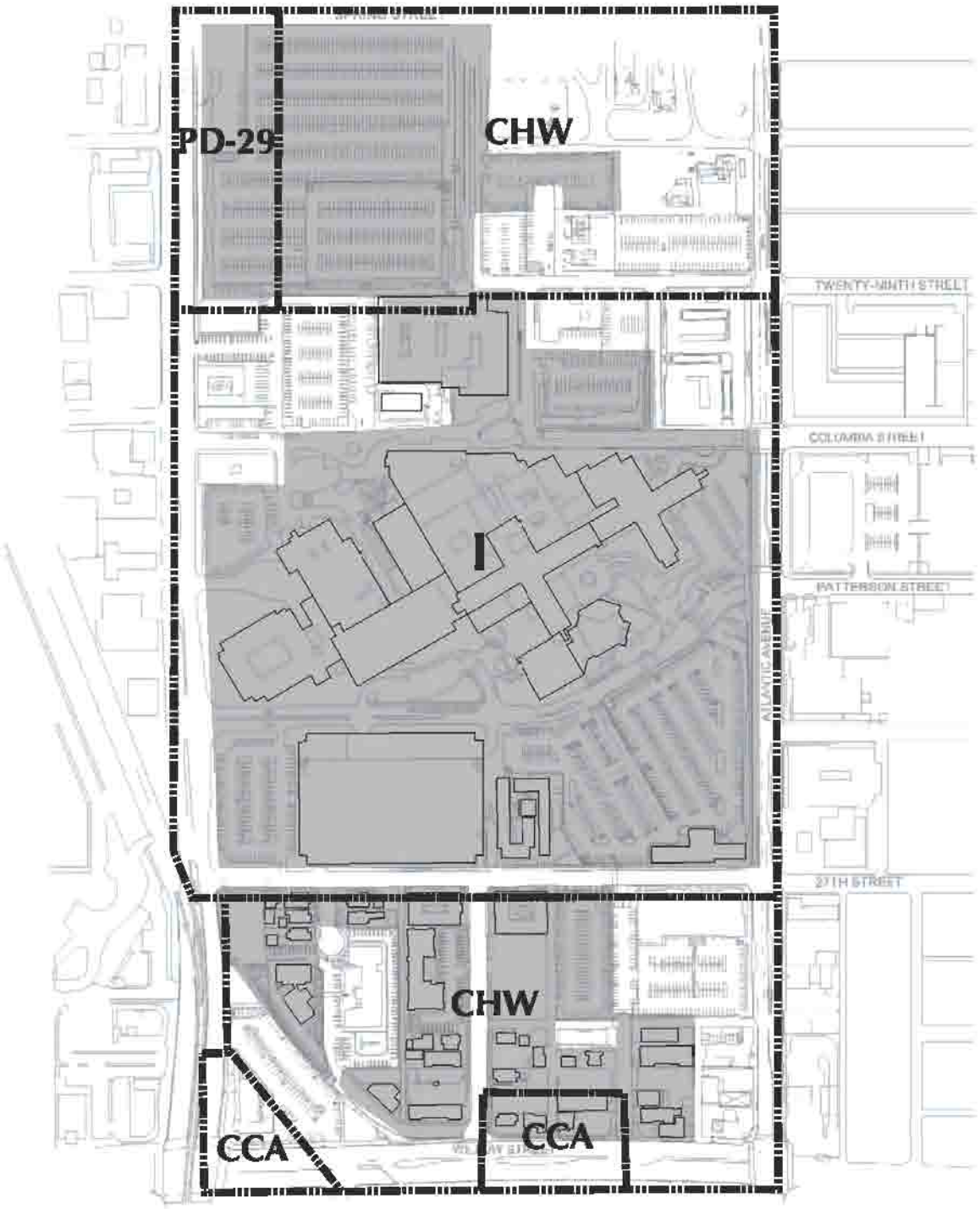


FIGURE 3.7.2-1
General Plan Land Use Designations



LEGEND

- Zoning Districts
- LBMMC Campus
- PD-29 Planned Development
- CHW Regional Highway Commerical
- I Institutional
- CCA Community Automobile-Oriented

N

Not to Scale

FIGURE 3.7.2-2
Existing Zoning Districts

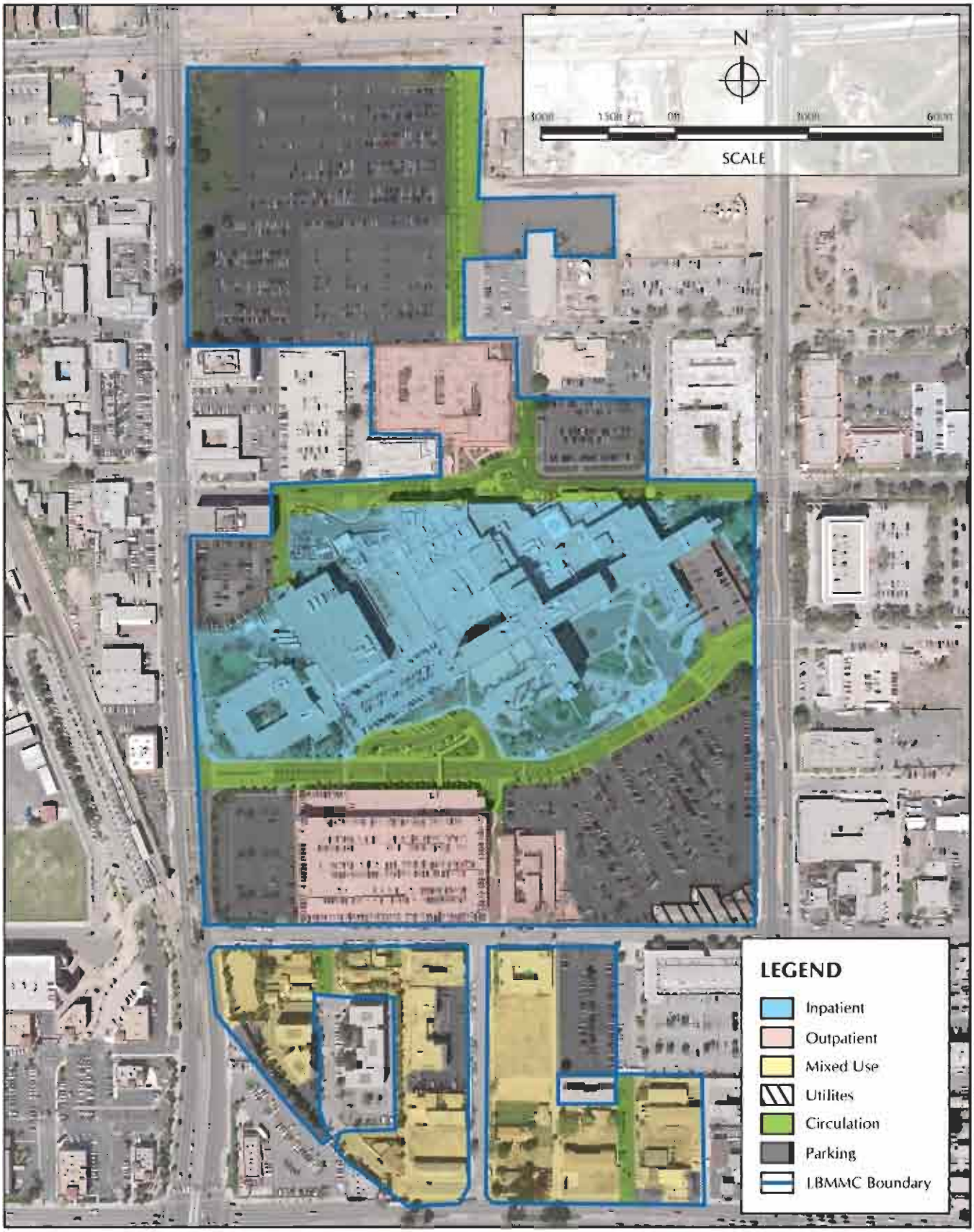


FIGURE 3.7.2-3
Immediate Vicinity of the Long Beach Memorial Medical Center

Spring neighborhood in the City of Signal Hill includes medical facilities bordering the proposed project site on the east. There are residential uses to the south. Commercial uses, Veteran's Memorial Park, and Robinson High School are located to the west of the proposed project site.

3.7.3 Significance Threshold

The potential for the proposed project to result in impacts related to land use and planning was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

The proposed project would normally be considered to have a significant impact to land use and planning when the potential for any one of the following three thresholds occurs:

- Causes the physical division of an established community
- Conflicts with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Conflicts with any applicable Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP)

3.7.4 Impact Analysis

The Initial Study identified a potential significant impact to land use and planning due to the potential for the proposed project to conflict with applicable adopted land use plans, policies, or regulations.

The proposed project is subject to the City of Long Beach General Plan[12] policies and regulations. The proposed project site is currently designated as LUD No. 7 Mixed-Use District in the Land Use element of the City of Long Beach General Plan[13] (Figure 3.7.2-1). The proposed project would be consistent with the City of Long Beach General Plan[14] policies and regulations. Therefore, no significant impact would occur.

The City of Long Beach Municipal Code[15] currently assigns four zoning designations to the Campus (Figure 3.7.2-2). Almost one-third of the Campus, located between 29th Street and 27th Street, is zoned as an I District. The portion of the Campus between 29th Street and Spring Street is zoned as a PD-29 District. The proposed project includes a requested zone change for this portion of the proposed project site from a CHW District to a PD-29 District. If the City of Long Beach approves this

[12] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[13] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[14] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[15] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

zone change, the proposed project would be consistent with the City of Long Beach Municipal Code for land use zoning. Therefore, no significant impact would occur.

With respect to the two other significance thresholds, the Initial Study did not identify the potential for significant impact. An analysis of the basis for these Initial Study findings is also provided below.

Physical Division of an Established Community

The proposed project is not expected to result in impacts to land use and planning through the physical division of an established community. The proposed project is completely within the City of Long Beach Memorial Hospital Medical Center Activity Node as designated in its General Plan Land Use element.[16] The proposed project would be implemented within the existing 54-acre Campus, and construction and demolition would solely involve developed parcels already owned or leased by the LBMMC. Thus, the proposed project would be situated in a manner that is compatible with the existing community, and there are no expected impacts to land use and planning resulting in a physical division of an established community. Therefore, no further analysis is warranted.

Conflicts with Adopted Relevant Plans and Policies in the Proposed Project Area

Direct and Indirect Impacts

City of Long Beach General Plan

The implementation of the proposed project would not have a significant impact on land use related to conflicts with adopted relevant plans and policies in the proposed project area. The proposed project site is within the primary land use jurisdiction of the City of Long Beach. The proposed project is subject to the City of Long Beach General Plan.[17] The Land Use element designates the Campus as LUD No. 7 Mixed-Use District.[18] This district provides for large, vital activity centers, such as medical facilities, which by their nature involve mixed uses. The present Campus is the heart of the General Plan Land Use element's Memorial Hospital Medical Center Activity Node. According to the General Plan, the policy objectives of LUD No. 7 are as follows:

- Centers are now or will be regulated by areawide planned development plans and ordinances.
- Land use controls and design and development standards for these areas shall be contained in the planned development plans and ordinances for each area.
- Land is intended for use in large, vital activity centers, not in strips along major arterials.

[16] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[17] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[18] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

- Combinations of land uses intended by this district are, for example, employment centers such as retail, offices, medical facilities, higher density residences, visitor-serving facilities, personal and professional services, or recreational facilities.

- Land is not intended for uses that may have a detrimental effect on the ambiance, environment, or social well-being of the area, such as industrial and manufacturing uses, warehousing activities, and outside storage.

- Residential densities will vary and be specified in the planned development ordinances for each district.

The Land Use element of the General Plan states, "Tall buildings in this center would be very appropriate from the urban design perspective, helping to enhance the importance of the area, and providing identification from the street and freeway networks."[19]

Within the wider Campus, the proposed project consists of a Master Plan of Land Uses that provides a conceptual framework for reorganization of the six existing land uses to accommodate the proposed project and anticipated future community needs for expansion of medical service facilities within the Campus boundary (Section 2, Figure 2.4-1, *Proposed Master Plan of Land Uses*). The proposed tall buildings and land uses are all consistent with the existing LUD No. 7 Mixed-Use District in the General Plan land use designation:

- The proposed project would be regulated by an areawide Master Plan, design guidelines, and ordinances.

- Land use controls and design and development standards would be contained in the Master Plan and design guidelines, and relevant ordinances.

- The proposed project would expand on the existing hospital facility, which is laid out as a campus after a landscaping pattern of the University of Southern California and does not allow strip development along Long Beach Boulevard or Atlantic Avenue.

- The proposed medical facilities are included in the list of combined land uses intended for this district.

- The proposed project would not introduce uses that may have a detrimental effect on the ambiance, environment, or social well-being of the area.

- Residential uses are not proposed at this point of time, and potential future densities are specified in the revised Master Plan (Appendix A, *Master Plan*) and ordinances for the district.

The proposed project could be accommodated within the existing General Plan LUD, which is LUD No. 7 Mixed-Use District. LUD No. 7 is intended to specify a vital core activity center with specific land uses that may vary over time, so long as they contribute to and do not detract from the social well-being of the mixed-use planned development. The proposed project can be accommodated

[19] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. (Page 217.) Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

within the existing LUD No. 7 designation and would not conflict with the General Plan's land use policies, plans, and regulations.

City of Long Beach Municipal Code

The proposed project includes a requested zoning amendment to provide consistency with the proposed project and uses the appropriate zoning and General Plan designations.

The portions of the Campus between 29th Street and Spring Street are zoned as PD-29 and CHW Districts. The PD District was established to allow flexible development plans to be prepared for areas of the City of Long Beach that may benefit from the formal recognition of unique or special land use and the definition of special design policies and standards not otherwise possible under conventional zoning district regulations. The CHW District is a commercial use district for mixed-scale commercial uses along major arterial streets and regional traffic corridors. Under the proposed project, LBMMC has requested the City to extend the eastern edge of the PD-29 zoning, between Spring Street (on the north) and 29th Street (on the south), to Pasadena Avenue. That land is currently zoned as a CHW District. However, the land owned by LBMMC between 27th Street (to the north) and Willow Street (to the south), currently zoned as a CHW District and as a CCA District, would maintain the existing zoning as it accommodates the proposed uses (Figure 3.7.4-1, *Proposed Zoning Districts*). If the City of Long Beach approves this zone change, the proposed project would be consistent with the City's zoning ordinance in the City of Long Beach Municipal Code.[20] This change is not anticipated to cause any significant conflict with the General Plan's land use policies, plans, and regulations because it allows for the same uses as the current land use designation and it anticipates the likely increased future demand for expansions in the capacity of the region's medical service facilities.

The proposed rezoning would not raise any conflicts with the purpose and intent or the objectives of the existing Land Use element LUD No. 7 Mixed Use designation.

The proposed project site is also within the Central Long Beach Redevelopment Area, but it is not within the boundaries of its two critical redevelopment areas subsections. The proposed project is not subject to a redevelopment agency agreement, and a redevelopment agency site plan review is not required.[21,22]

The Atlantic and Spring neighborhood in the City of Signal Hill borders the proposed project site along the east side of Atlantic Avenue, and the Land Use element of its General Plan is also consistent with the medical center expansion activities of the proposed project.[23] The proposed project is in a State Enterprise Zone, which indicates that it is recognized as a socioeconomically challenged area and that the State of California offers economic incentives to businesses that locate within the zone; however, this does not affect land use at the proposed project site.

[20] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

[21] City of Long Beach, Redevelopment Agency. June 2003. *Redevelopment Agency Design Review*. Contact: City of Long Beach, 333 West Ocean Boulevard, 3rd Floor, Long Beach, CA 90802.

[22] Angela Reynolds, *Personal Communication*, 25 June 2004. City of Long Beach, Department of Planning and Building, 333 West Ocean Boulevard, 3rd Floor, Long Beach, CA 90802.

[23] City of Signal Hill, Community Development Department. 3 July 2001. *Land Use Element of the Signal Hill General Plan*. Contact: City of Signal Hill, Community Development Department, 2175 Cherry Avenue, Signal Hill, CA 90755. Available at: http://www.signal-hill.ca.us/community_development/general_plan.php

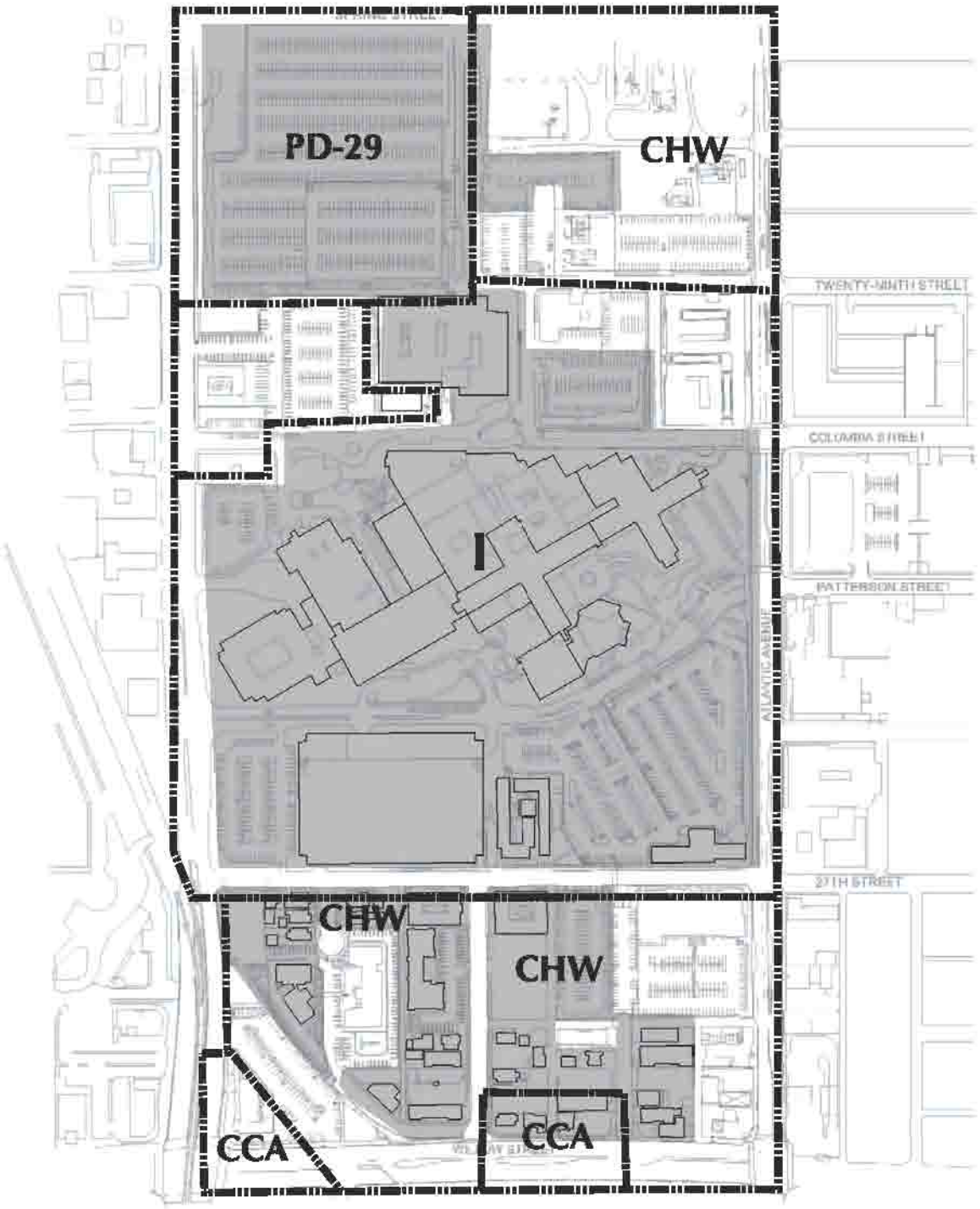


FIGURE 3.7.4-1
Proposed Zoning Districts

The proposed project is not located within the California Coastal Commission Coastal Zone; therefore, it does not fall under the jurisdiction of the California Coastal Commission or the local coastal plan. A review of a City of Long Beach geographic information system (GIS) aerial map of the site (Figure 3.7.4-2, *Aerial Photograph*) indicates that it is not subject to special restrictions,[24] is not within a parking-impacted area, and is not subject to special fence-height restrictions. The site investigations by Sapphos Environmental, Inc. staff[25] indicate that the proposed project site is not within an historical district. No zoning overlays exist for the site, and the only prescription indicated is a special setback requirement of 10 feet along Atlantic Avenue for street-widening purposes.[26]

The proposed project would be consistent with the goals and policies of the City of Long Beach General Plan. After the City of Long Beach approves the required zone change, the proposed project would be consistent with the goals and policies of the General Plan to develop the area for medical services and related uses. The proposed project would not conflict with adopted relevant plans and policies in the proposed project area.

Conflict with Any Applicable HCP or NCCP

The proposed project is not expected to result in impacts to land use and planning in relation to a conflict with any applicable HCP or NCCP. The proposed project area is entirely urbanized and is not located in an area proposed or adopted as part of an HCP.[27] The proposed project area is not located in an area proposed or adopted as part of an NCCP.[28] The proposed project area does not contain endangered or threatened species or sensitive or rare habitat, and it has not been designated as a wildlife corridor or migration route. Therefore, there are no expected impacts to land use and planning related to a conflict with any adopted HCP or NCCP and no further analysis is warranted.

3.7.5 Cumulative Impacts

The incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects in Section 2, Project Description, Table 2.6-1, *List of Related Project*, would not cause a significant impact to land use and planning. All of the related projects occur outside of the Campus. Therefore, the proposed project, when considered in conjunction with the related projects, would not result in significant cumulative impacts to land use and planning.

3.7.6 Mitigation Measure

The analysis undertaken for this document determined that the proposed project would not result in significant impacts related to land use and planning. Therefore, no mitigation measure would be required.

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[24] Site investigations conducted by Ms. Laurie Solis of Sapphos Environmental, Inc.

[25] Site investigations conducted by Ms. Laurie Solis and Ms. Kip Harper on October 8, 2004.

[26] City of Long Beach, Department of Planning and Building. 26 May 2004. *Map of 2801 Atlantic Avenue, AIN No. 7207010041*. (Geographic Information System.) Contact: City of Long Beach, Department of Planning and Building, 333 West Ocean Boulevard, Long Beach, CA 90802.

[27] Christine Medak, *Personal Communication*, 30 June 2004. U.S. Fish and Wildlife Service, Ecological Services Office, 2730 Locker Avenue West, Carlsbad, CA 91698.

[28] Donald Chadwick, *Personal Communication*, 30 June 2004. California Department of Fish and Game, South Coast Region Office, 4949 Viewridge Avenue, San Diego, CA 92123.

FIGURE 3.7.4-2
Aerial Photograph

3.7.7 Level of Significance after Mitigation

Implementation of the proposed project would not result in a significant impact to land use and planning that would need to be reduced to below the level of significance.

3.8 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to the National Pollution Discharge Elimination System (NPDES). Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to NPDES and to identify potential alternatives.

The analysis of NPDES includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential for impacts to NPDES was evaluated in accordance with the methodologies provided by the City of Long Beach General Plan,[2] the California Storm Water Best Management Practice Handbook for Construction Activity,[3] the City of Long Beach Storm Water Management Plan,[4] the hydrology and water quality report prepared by Moffat and Nichol for the proposed project (Appendix H, *Hydrology and Water Quality*), and the Water Quality Control Plan (Basin Plan) for the Los Angeles Region (4).[5]

3.8.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies related to hydrology and water quality that must be considered by the City of Long Beach during the decision-making process for projects that involve the potential to result in significant impacts related to NPDES.

Federal

Section 401 of the Clean Water Act of 1972

The federal Clean Water Act (CWA)[6] of 1972 sets national goals and policies to eliminate discharge of water pollutants into navigable waters and to achieve a water quality level that will protect fish, shellfish, and wildlife while providing for recreation in and on the water whenever possible. The

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. 30 April 1973. *Conservation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] California Stormwater Quality Association. 2003. *California Stormwater Best Management Practice Handbook*. Contact: California Stormwater Quality Association, P.O. Box 2105, Menlo Park, CA 94026.

[4] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at http://www.lbstormwater.org/plan/

[5] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Contact: 320 West Fourth Street, Suite 200, Los Angeles, CA 90013.

[6] Office of the Law Revision Counsel. 2 January 2002. 33 U.S. Code, §1341: "Certification." Available at: http://uscode.house.gov

CWA regulates point-source and non-point-source discharges to receiving waters with the NPDES program. The CWA provides for delegating certain responsibilities for water quality control and planning to the states. The State of California has been authorized by the U.S. Environmental Protection Agency (EPA) to administer and enforce portions of the CWA, including the NPDES program. The State of California issues NPDES permits through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The proposed project is regulated by the Los Angeles RWQCB.

In 1987, the CWA was amended to state that the discharge of pollutants to waters of the United States from storm water is effectively prohibited, unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) and established a framework for regulating industrial, municipal, and construction storm water discharges under the NPDES program. The 1987 amendment was developed from the awareness that storm water runoff, a non-point-source discharge, is a significant source of water pollution. In 1990, the U.S. EPA published final regulations that established application requirements to determine when industrial, municipal, and construction activities require an NPDES permit.

On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182. This order is for NPDES Permit No. CAS004001 for municipal storm water and urban runoff discharges within the County of Los Angeles (County).

As adopted in December 2001, Order No. 01-182 covers 84 cities and the unincorporated areas of the County, with the exception of the portion of the County in the Antelope Valley, including the Cities of Lancaster and Palmdale, as well as the City of Long Beach and the City of Avalon. Under Order No. 01-182, the County of Los Angeles Flood Control District is designated as the Principal Permittee; the County and the 84 incorporated cities are designated as Permittees. The Principal Permittee coordinates and facilitates activities necessary to comply with the requirements of Order No. 01-182, but is not responsible for ensuring compliance of any of the other Permittees.

In compliance with Order No. 01-182, the Permittees have implemented a Storm Water Quality Management Plan (SWQMP), with the ultimate goal of accomplishing the requirements of Order No. 01-182 and reducing the amount of pollutants in storm water and urban runoff. The SWQMP is divided into six separate programs, as outlined in Order No. 01-182. These programs are as follows:

1. Public Information and Participation
2. Industrial/Commercial Facilities
3. Development Planning
4. Development Construction
5. Public Agency Activities
6. Illicit Connection/Illicit Discharge

Each Permittee is required by the Permit to have implemented these programs by February 1, 2002.

General Construction Activity Storm Water Discharges

Storm water discharges that are composed entirely of runoff from qualifying construction activities may be eligible for regulation under the General Construction Activity Storm Water Permit issued by the SWRCB rather than regulation under an individual NPDES permit issued by the appropriate RWQCB. Construction activities that qualify include clearing, grading, excavation, reconstruction, and dredge-and-fill activities that result in the disturbance of at least 5 acres of total land area. The proposed project would be required to conform to the Standard Urban Storm Water Management Plan (SUSMP) in accordance with the NPDES General Construction Activity Storm Water Permit to reduce water quality impacts to the maximum extent practicable. A SUSMP is a report that includes one or more site maps, an identification of construction activities that could cause pollutants to enter the storm water, and a description of measures or best management practices (BMPs) to control these pollutants to the maximum extent practicable. A BMP is defined by the Storm Water Quality Task Force as any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces storm water pollution.

Regional

Water Quality Control Plan for the Los Angeles Region

The federal CWA is administered and enforced by the SWRCB, which develops regulations to implement water quality control programs mandated at the federal and state levels.

The Los Angeles RWQCB has prepared a Basin Plan that includes the coastal watersheds of Los Angeles and Ventura Counties. The first essentially complete Basin Plan, which was established under the requirements of California's 1969 Porter-Cologne Water Quality Control Act,[7] was adopted in 1975 and revised in 1984. The most recent version of the Basin Plan was adopted in 1994.[8]

The Basin Plan assigned beneficial uses to surface and groundwater such as municipal water supply and water-contact recreation to all waters in the basin. The Basin Plan also sets water-quality objectives, subject to approval by the U.S. EPA, which are intended to protect designated beneficial uses. These objectives apply to specific parameters (numeric objectives) and general characteristics of the water body (narrative objectives). An example of a narrative objective is the requirement that all waters must remain free of toxic substances in concentrations producing detrimental effects on aquatic organisms. Numeric objectives specify concentrations of pollutants that are not to be exceeded in ambient waters of the basin.

[7] State of California. 1969. Porter-Cologne Water Quality Control Act. California Water Code, Section 13000 et seq.: "Water Quality." Available at: http://www.ceres.ca.gov/index.html

[8] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Contact: 320 West Fourth Street, Suite 200, Los Angeles, CA 90013.

Local

City of Long Beach General Plan

The City of Long Beach and the California Storm Water Best Management Practice Handbook for Construction Activity[9] has identified standard BMPs that are capable of reducing impacts to soil erosion to below the level of significance.

City of Long Beach Storm Water Management Plan

The objective of the federal CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges from municipal separate storm sewers (MS4s) to waters of the United States. Section 402(p)(3)(B) requires the following for MS4 permits:

> (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

The City of Long Beach is fully implementing the Long Beach Storm Water Management Program (LBSWMP) to meet the objectives of effectively prohibiting non-storm water discharges and reducing the discharge of pollutants to the maximum extent practicable such that these discharges will not adversely impact the beneficial uses of the City of Long Beach's receiving waters. Essentially, the City's ultimate objective is to comply with the federal CWA and the state Porter-Cologne Water Quality Control Act.

The LBSWMP is a comprehensive program containing several elements, practices, and activities aimed at reducing or eliminating pollutants in storm water to the maximum extent practicable. The programs that are relevant to the proposed project that contribute toward preventing and mitigating storm water pollution include the following:

- Street maintenance, which consists of the following elements: street sweeping, sidewalk and alley cleaning, and maintenance operations
- Sewage systems operations and maintenance
- Storm drain systems operation and maintenance
- Municipal facilities maintenance
- Public construction activities
- Landscaping maintenance

The LBSWMP also addresses the planning of development projects and construction of projects not within the public street right-of-ways.

[9] California Stormwater Quality Association. 2003. *California Stormwater Best Management Practice Handbook*. Contact: California Stormwater Quality Association, P.O. Box 2105, Menlo Park, CA 94026.

3.8.2 Existing Conditions

Drainage

The City of Long Beach is divided into 30 major drainage basins. Within each drainage basin, there are sub-basins for major drains 36 inches in diameter or larger that have their outfall to a regional drain, regional retention basin, or the Long Beach Harbor. The proposed project is located in Drainage Basin 6.[10] Basin 6 is 695 acres and is made up of 475 acres of residential, 125 acres of commercial, 73 acres of institutional, and 17 acres of open space. It is located in the west central portion of the City of Long Beach just east of the Los Angeles River. The extreme eastern portion of Basin 6 lies within the City of Signal Hill. It is bound on the north, south, east, and west by West Wardlow, Eagle Street, California Avenue, and the Los Angeles River, respectively.

The drainage pattern is to the south and southeast. There are two major storm drain systems that have a total of five major lines contributing runoff. One major system drains the western portion of Basin 6, and the other drains the eastern portion. The two systems converge at San Francisco Avenue just north of Willow Street and outfall into the Los Angeles River through the Willow Pump Station. This station is owned by the City of Long Beach and has a maximum operating capacity of 466 cubic feet per second (CFS). There is a split flow at 25th Street and Long Beach Boulevard, a 48-inch pipe that remains in Basin 6 and a 36-inch pipe that takes flow into Basin 5.

Storm water runoff from areas east of Atlantic Avenue and areas north of Spring Street are conveyed to a 54-inch storm drain that traverses east-west through the hospital site. A pump station is located at the west side of the railroad tracks, which leads the storm water toward the Los Angeles River (Section 3.6, Hydrology and Water Quality, Figure 3.6.2-3, *Storm Drain System*).

Surface Water Quality

Surface water quality in the proposed project area has been affected in a way that is consistent with the urban development that has occurred. Non-point-source pollution from urban, impervious surfaces (i.e., parking lots, roadways, sidewalks, rooftops, etc.) is a major contributor to impairment of streams and waterways. Impervious surfaces contribute grease, oil, antifreeze, and other vehicle emissions, as well as heavy metals from brake dust, litter, and other debris and pathogens, into water systems. Landscaped areas contribute pesticides, fertilizers, and other landscape waste into the water system. The proposed project area consists almost entirely of impervious surfaces.

3.8.3 Significance Thresholds

The potential for the proposed project to result in impacts to NPDES was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines. The proposed project would normally be considered to have a significant impact to NPDES when the potential for any one of the following three thresholds occurs:

- Results in a significant loss of pervious surface
- Creates a significant discharge of pollutants into the storm drain or waterway
- Violates any BMP of the NPDES permit

[10] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at http://www.lbstormwater.org/plan/

3.8.4 Impact Analysis

Pervious Surface

The proposed project would not result in significant impacts from the loss of pervious surfaces. The current site is nearly 100 percent impervious to rainfall. Proposed site improvements would not be expected to change the pervious areas. The proposed sites for development of the proposed project elements are currently hardscaped and do not represent sources of recharge to any existing groundwater aquifer.

The proposed structures and surrounding area feature a nearly 100-percent impervious surface, and the imperviousness of the surface would remain relatively the same as the existing condition, ensuring that infiltration would remain at current levels and that the overall volume of flow accumulating on or off site would not change from existing conditions. Therefore, the proposed project would not result in an impact from loss of pervious surfaces, and no further mitigation is required.

Storm Drain and Waterway

The proposed project consists of redevelopment of existing developed sites (parking lots, parking structure, and office buildings) to more effectively utilize Long Beach Memorial Medical Center (LBMMC) property. Redevelopment of existing developed areas would not be expected to create a significant discharge of pollutants into the storm drain or waterway after incorporation of BMPs. The total increase in vehicular trips on roadways and driveways, and the associated increase in parking within the LBMMC campus (Campus) would be expected to contribute additional pollutants to storm water runoff, thus requiring the consideration of BMPs to maintain or improve the quality of storm water runoff for the Campus.

The municipal storm water NPDES permit issued to the County by the Los Angeles RWQCB in 1996 requires the development and implementation of a program addressing storm water pollution issues in development planning for private projects. As part of the NPDES permit, the LBSWMP requires new developments to meet the permit requirements through BMPs to reduce or eliminate non-storm water discharges to the storm water system. These requirements meet the water quality standards as set forth by the responsible agencies and address storm runoff quantity and flow rate, suspended solids (primarily from erosion), and contaminants such as phosphorus (primarily from landscaping) and hydrocarbons (primarily from automobiles).

NPDES Permit

As a part of the NPDES permit issued to the County by the Los Angeles RWQCB, the LBSWMP requires new developments to meet the permit requirements through a SUSMP. The construction elements of the proposed project would require a SUSMP and overall compliance with the NPDES permit programs. The SUSMP outlines the BMPs to reduce or eliminate non-storm water discharges to the storm water system. These requirements meet the water quality standards set forth by the presiding agencies and address storm runoff quantity and flow rate, suspended solids (primarily from erosion), and contaminants such as phosphorus (primarily from landscaping) and hydrocarbons (primarily from automobiles). The proposed project would not violate any BMPs for the NPDES.

The primary objectives of the 1987 amendments to the CWA that established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES include the following:

- Effectively prohibiting non-storm water discharges
- Reducing the discharge of pollutants from storm water conveyance systems to the maximum extent practicable

3.8.5 Cumulative Impacts

The incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects (Section 2, Project Description, Table 2.6-1, *List of Related Projects*), would not cause a significant cumulative impact to the NPDES permit. The proposed project would not impact NPDES because there is not a net increase in impervious surfaces from that of the existing conditions. The proposed project would include the incorporation of BMPs for reducing discharge of the pollutants into the storm drain and waterway system. Therefore, implementation of the proposed project would not cause a significant cumulative impact on NPDES when considered with the related past, present, or reasonably foreseeable, probable future project.

3.8.6 Mitigation Measure

Measure NPDES-1

The City of Long Beach Planning and Building Department shall require the construction contractor to implement best management practices (BMPs) consistent with National Pollution Discharge Elimination System (NPDES) Permit No. CAS 004003 to reduce transport of Pollutants of Concern from the construction site to the storm drainage and waterway system for each construction element of the proposed project: Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; Todd Cancer Institute Phases I and II; roadway alignment; and parking area. Prior to completion of final plans and specifications for each construction element of the proposed project, the City of Long Beach Planning and Building Department shall ensure that the plans and specifications require compliance with NPDES Permit No. CAS 004003. The construction contractor for each element of the proposed project shall be required to submit a Standard Urban Storm Water Management Plan to the City of Long Beach for review and approval at least 30 days prior to the anticipated need for a grading permit. The City of Long Beach Planning and Building Department shall monitor construction to ensure compliance with NPDES Permit No. CAS 004003. The Office of Statewide Health Planning and Development has jurisdiction over inpatient facilities, and the City of Long Beach would have jurisdiction over outpatient facilities.

3.8.7 Level of Significance after Mitigation

Implementation of mitigation measure NPDES-1 would be expected to reduce potential impacts to NPDES to below the level of significance.

3.9 NOISE

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts from noise. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from noise and to identify potential alternatives.

The analysis of noise includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential for impacts from noise has been analyzed in accordance with the methodologies provided by the County of Los Angeles Streamlined General Plan,[2] the Noise Control Ordinance of the County of Los Angeles,[3] and the site-specific acoustical analysis and modeling undertaken for the proposed project (Appendix I, *Noise Analysis*).[4]

Noise Definition

Noise is defined as unwanted sound. The human response to environmental noise is subjective and varies considerably from individual to individual. Sensitive receptors, such as residential areas, convalescent homes, schools, auditoriums, and other similar land uses, may be affected to a greater degree by increased noise levels. The effects of noise can range from interference with sleep, concentration, and communication to physiological and psychological stress; at the highest intensity levels, effects can include hearing loss.

The method commonly used to quantify environmental noise involves evaluation of all frequencies of sound, with an adjustment to reflect the constraints of human hearing. Because the human ear is less sensitive to low and high frequencies than to midrange frequencies, noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called "A-weighting," written as dBA. In practice, environmental noise is conveniently measured using a sound-level meter that includes an electronic filter corresponding to the A-weighted curve that allows comparison to common noise sources and their A-weighted sound level, subjective loudness, and type of effect (Table 3.9-1, *A-Weighted Sound Levels*).

---

[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] County of Los Angeles, Department of Regional Planning. 1993. *Streamlined County of Los Angeles General Plan*. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

[3] County of Los Angeles. 1978. Noise Control Ordinance of the County of Los Angeles. Ord. 1, 1778, § 2 (Art. 1, § 101) and Ord. 1, 1773, § 2 (Art. 1, § 101). Chapter 12.08. Available at: http://ordlink.com/codes/lacounty/index.htm

[4] VSA n Associates, Inc. 8 October 2004. *Long Beach Memorial Medical Center Expansion Noise Impact Analysis*. Contact: VSA n Associates, Inc., 12525 Lambert Road, Whittier, CA 90606.

TABLE 3.9-1
A-WEIGHTED SOUND LEVELS

Noise Source	A-Weighted Sound Level (in dBA)	Subjective Loudness	Effect of Noise
Near jet engine	130	Intolerable or deafening	Hearing loss
Loud auto horn	100	Very noisy	Hearing loss
Normal conversation at 5 to 10 feet	60	Loud	Speech interference
Bird calls	40	Moderate	Sleep disturbance
Whisper	30	Faint	No effect
Rustling leaves	10	Very faint	No effect

There are several statistical tools used to evaluate and compare noise-level measurements. To account for the fluctuation in noise levels over time, noise impacts are commonly evaluated using time-averaged noise levels. Time averages are typically expressed in terms of the A-weighted Noise Equivalent Level (L_{eq}), a steady-state energy level equal to the energy content of the time-varying period. This means that the L_{eq} represents the noise level experienced over a stated period of time averaged as a single noise level. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, an artificial decibel increment is added to quiet-time noise levels in 24-hour noise descriptors, or a 24-hour L_{eq}, called the Community Noise Equivalent Level (CNEL), also called the Day-Night Level (L_{dn}).

Another measure used to characterize noise exposure is the variation in sound levels over time, measured by the percentage exceedance level. L_{10} is the A-weighted sound level that is exceeded for 10 percent of the measurement period, and L_{90} is the level that is exceeded for 90 percent of the measurement period. L_{50} is the median sound level. Additional statistical measures include L_{min} and L_{max}, the minimum and maximum sound levels, respectively, measured during a stated measurement period.

These descriptions of noise are based on the sound level at the point of measurement. When determining potential impacts to the environment, the noise level at the receptor is considered. Noise is attenuated as it propagates from the source to the receiver. Attenuation is the reduction in the level of sound resulting from absorption by the topography, the atmosphere, distance, barriers, and other factors. Attenuation is also logarithmic, rather than linear, so that for stationary sources like the proposed project, noise levels decrease approximately 6 dBA for every doubling of distance.

Ground-Borne Vibration Definition

Vibration is an oscillatory motion, which can be described in terms of displacement, velocity, or acceleration. Because motion is oscillatory and there is no net movement of the vibrating element, the average of any of the motion descriptors is zero. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the movement, and the acceleration represents the rate of change in the speed.

Although displacement is easier to understand than velocity and acceleration, it is rarely used for describing ground-borne vibration. This is because most transducers used to measure ground-borne vibration use either velocity or acceleration. Even more important, the response of humans, buildings,

and equipment to vibration is more accurately described using velocity or acceleration. Therefore, ground-borne vibration is measured as a velocity level in 10^{-6} inches per second.

The effects of ground-borne vibration include striking movements of the building floors, rattling of windows, or shaking of items on shelves or hangings on walls. The rumble is the noise radiated from the motion and contact of room surfaces. In essence, the room surfaces act like a loudspeaker. This is called ground-borne noise. In extreme cases, vibrations can cause damage to buildings.

3.9.1 Regulatory Framework

State and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise.

State

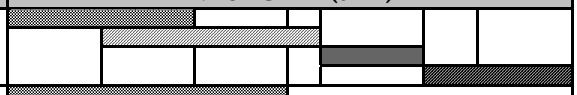
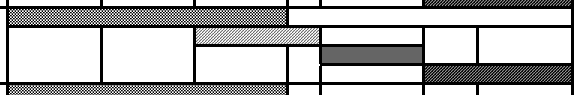
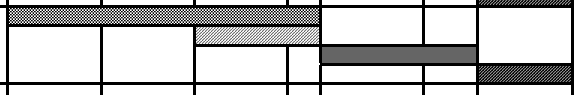
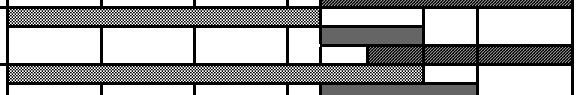
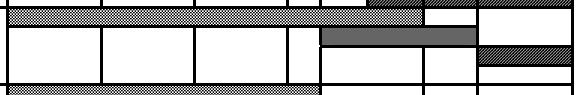
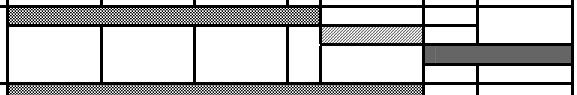
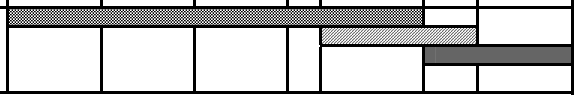
California Senate Bill 860, which became effective January 1, 1976, directed the California Office of Noise Control within the State Department of Health Services to prepare "Guidelines for the Preparation and Content of Noise Elements of the General Plan."[5] One purpose of these guidelines was to provide sufficient information concerning the noise environment in the community so that noise could be considered in the land use planning process. As part of this publication, Land Use Compatibility Standards were developed in four categories: Normally Acceptable, Conditionally Acceptable, Normally Unacceptable, and Clearly Unacceptable (Table 3.9.1-1, *Land Use Compatibility for Community Noise Environments*). These categories were based on earlier work done by the U.S. Department of Housing and Urban Development (HUD). The interpretation of the four categories is as follows:

- Normally Acceptable: Specified land use is satisfactory without special insulation.
- Conditionally Acceptable: New development requires detailed analysis of noise insulation requirements.
- Normally Unacceptable: New development is discouraged and requires a detailed analysis of insulation features.
- Clearly Unacceptable: New development should not be undertaken.

The State of California has developed a Land Use Compatibility Matrix for community noise environments that further defines four categories of acceptance and assigns CNEL values to them. In addition, the State Building Code (Title 24, California Code of Regulations [CCR], Part 2) establishes uniform minimum noise insulation performance standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and residential units other than detached single-family residences from the effects of excessive noise, including, but not limited to, hearing loss or impairment and interference with speech and sleep. Residential structures to be located where the CNEL or L_{dn} is 60 dBA or greater are required to provide sound insulation to limit the interior CNEL to a maximum of 45 dBA. An acoustic, or noise, analysis report prepared by an experienced acoustic engineer is required for the issuance of a building permit for these structures. Conversely, land use changes that result in increased noise levels at residences of 60 dBA or greater must be considered in the evaluation of impacts to ambient noise levels.

[5] California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. Contact: California Department of Health Services, Office of Noise Control, P.O. Box 942732 Sacramento, CA 94234-7320.

TABLE 3.9.1-1
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use Category	Community Noise Exposure 55 60 65 70 75 80 L_{dn} or CNEL (dBA)
Residential—low-density single-family, duplex, mobile homes	
Residential—multiple family	
Transient lodging—motels, hotels	
Schools, libraries, churches, hospitals, nursing homes	
Auditoriums, concert halls, amphitheaters	
Sports area, outdoor spectator sports	
Playgrounds, neighborhood parks	
Golf courses, riding stables, water recreation, cemeteries	
Office buildings, business commercial and professional	
Industrial, manufacturing, utilities, agriculture	

INTERPRETATION:

Normally acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Normally unacceptable
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Conditionally acceptable
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice.

Clearly unacceptable
New construction of development should generally not be undertaken.

SOURCE:
California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. Contact: California Department of Health Services, Office of Noise Control, P.O. Box 942732 Sacramento, CA 94234-7320.

Local

City of Long Beach Municipal Code

Operational Noise

Chapter 8.80 of the Long Beach Municipal Code controls unnecessary, excessive, and annoyance noise and vibration in the City of Long Beach. Section 8.80.150 of the Long Beach Municipal Code outlines the exterior noise limit sound levels by receiving land use (Table 3.9.1-2, *City of Long Beach Exterior Noise Limits by Receiving Land Use*).

TABLE 3.9.1-2
CITY OF LONG BEACH EXTERIOR NOISE LIMITS BY RECEIVING LAND USE

Receiving Land Use District	Time Period	Noise Level (dBA)	Steady Audible Tone
District One—Predominantly residential with other land use types also present	Night: 10:00 p.m.–7:00 a.m.	45	40
	Day: 7:00 a.m.–10:00 p.m.	50	45
District Two—Predominantly commercial with other land use types also present	Night: 10:00 p.m.–7:00 a.m.	55	50
	Day: 7:00 a.m.–10:00 p.m.	60	55
District Three—Predominantly industrial with other land types use also present	Any time	65	60
District Four—Predominantly industrial with other land types use also present	Any time	70	65
District Five—Airport, freeways, and waterways regulated by other agencies	Regulated by other agencies and laws		

Section 8.80.150 of the Long Beach Municipal Code states the following:

> No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:
>
> 1. The noise standard for that land use district as specified in Section 8.80.160 for a cumulative period of more than thirty minutes in any hour; or
>
> 2. The noise standard plus five decibels for a cumulative period of more than fifteen minutes in any hour; or
>
> 3. The noise standard plus ten decibels for a cumulative period of more than five minutes in any hour; or
>
> 4. The noise standard plus fifteen decibels for a cumulative period of more than one minute in any hour; or
>
> 5. The noise standard plus twenty decibels or the maximum measured ambient, for any period of time.

If the measured ambient level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in 5-decibels increments in each category as appropriate to encompass or reflect the ambient noise level. If the measurement location is on a boundary between two different districts, the noise-level limit applicable shall be the arithmetic mean of the two districts.

Section 8.80.160 of the Long Beach Municipal Code states that, in the event that an alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the standard limits shall be reduced by 5 dBA (Table 3.9.1-2).

Construction Noise

Section 8.80.202 of the Long Beach Municipal Code lists the permitted construction times and does not provide specific standards for noise levels associated with construction during permitted times or times outside of permitted times. Variances are required for construction activities outside of permitted times. Construction activity noise regulations apply only to construction activities where a building or other related permit is required or was issued by the building official. The requirements are as follows:

- Weekdays and federal holidays: No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition, or any other related building activity that produces loud or unusual noise that annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. and 7:00 a.m. the following day on weekdays, except for emergency work authorized by the building official. For the purposes of this section, a federal holiday shall be considered a weekday.

- Saturdays: No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition, or any other related building activity that produces loud or unusual noise that annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, except for emergency work authorized by the building official.

- Sundays: No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition, or any other related building activity at any time on Sunday, except for emergency work authorized by the building official or except for work authorized by permit issued by the noise control officer.

- Owner's/employer's responsibility: It is unlawful for the landowner, construction company owner, contractor, subcontractor, or employer of persons working, laboring, building, or assisting in construction to permit construction activities in violation of provisions in this section.

- Sunday work permits: Any person who wants to do construction work on a Sunday must apply for a work permit from the noise control officer. The noise control officer may issue a Sunday work permit if there is good cause shown; and in issuing such a permit, consideration will be given to the nature of the work and its proximity to

residential areas. The permit may allow work on Sundays, only between 9:00 a.m. and 6:00 p.m., and it shall designate the specific dates when it is allowed.

Vibration

Section 8.80.200/G of the Long Beach Municipal Code outlines the policies and standards relating to operational ground-borne vibration. This section states that operating or permitting the operation of any device that creates vibration above the vibration perception threshold of an individual, at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way. For the purposes of this section, *vibration perception threshold* means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such directed means as sensation by touch or visual observation of moving objects.

The City of Long Beach has not adopted any standards for ground-borne vibration associated with construction activities.

City of Long Beach General Plan Noise Element

Operational Noise

The Noise element of the City of Long Beach General Plan[6] suggests criteria for maximum acceptable outdoor and indoor noise levels based on land use type. The criteria are for planning purposes only and do not carry any regulatory authority. The Noise element contains a list of specific goals and strategies related to land use planning, the general noise environment, transportation noise, construction and industrial noise, population and housing noise, and public health and safety. The Noise element serves six purposes:

- To protect and preserve both the property rights of owners and the right to quietness of the citizenry at large
- To make the City a quieter, more pleasant place to live
- To diminish transportation noise impacts on the population
- To respond to demands for a reasonably quiet environment; this is compatible with both existing ambient noise levels and continuing building (i.e., construction noise) and industrial development
- To reduce both noise exposure to the population and noise-level outputs generated by the population
- To attain the lowest possible level of harmful effects of noise on people by the implementation of information, monitoring, and advisory programs.

[6] City of Long Beach, Department of Planning and Building. 25 March 1975. *Noise Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

The Noise element of the City of Long Beach General Plan recommends numerical criteria to judge whether noise from construction and demolition sites is reasonable. In considering what criteria will be appropriate in the daytime, the most weight is given to the following factors:

1. The noise should not interfere unduly with lives and the work of people in nearby buildings.

2. The work on most construction and demolition sites does not last very long, usually for some weeks or months at most.

3. A great deal of building is done in urban areas where there is noise from other sources such as traffic.

4. The efficiency of the building industry depends upon the use of machines.

5. Any criterion must be economically and operationally practicable for contractors.

Construction Noise

Based on the above-mentioned factors, the Noise element of the City of Long Beach General Plan suggests an acceptable construction noise level, where an average maximum noise level outside the nearest building at the window of an occupied room closest to the site boundary should not exceed:

- 70 dBA in areas away from main roads and sources of industrial noise
- 75 dBA in areas near main roads and heavy industries

Aircraft Noise

The standard for the acceptable level of aircraft noise for persons living in the vicinity of airports is hereby established to be a CNEL of 65 dBA. These regulations consider the hospital land use as incompatible if the exterior aircraft noise exceeds 65-dBA CNEL. If the exterior noise levels exceed 65-dBA CNEL, the building shell construction must provide adequate noise reduction, such that the interior noise levels in all rooms used by patients do not exceed an interior CNEL of 45 dBA.

The Airport Noise Compatibility Ordinance (Long Beach Municipal Code, Chapter 16.43), passed in 1995, prevents incompatible properties (i.e., residences, churches, and schools) from being exposed to noise above 65-dBA CNEL. To achieve this goal, CNEL budget and enforcement limits have been established for five separate user groups (air carrier, charter, commuter, general aviation, and industrial) based on the baseline year of 1989–1990.

Roadway Noise

The City of Long Beach has not adopted regulations for traffic noise. In the absence of regulations, the evaluation of the impact is based on California Department of Transportation (Caltrans) requirements. Per Caltrans requirements, the determination of whether a noise increase is considered to be substantial is dependent, in part, on the existing noise levels and the noise abatement criteria (NAC) of 67-dBA $L_{eq}(h)$ (i.e., equivalent noise level measured over one hour) for hospital land use. Caltrans considers a noise level increase to be substantial when the proposed project would result in an increase (Figure 3.9.1-1, *Substantial Noise Increase for Hospital Land Use*).

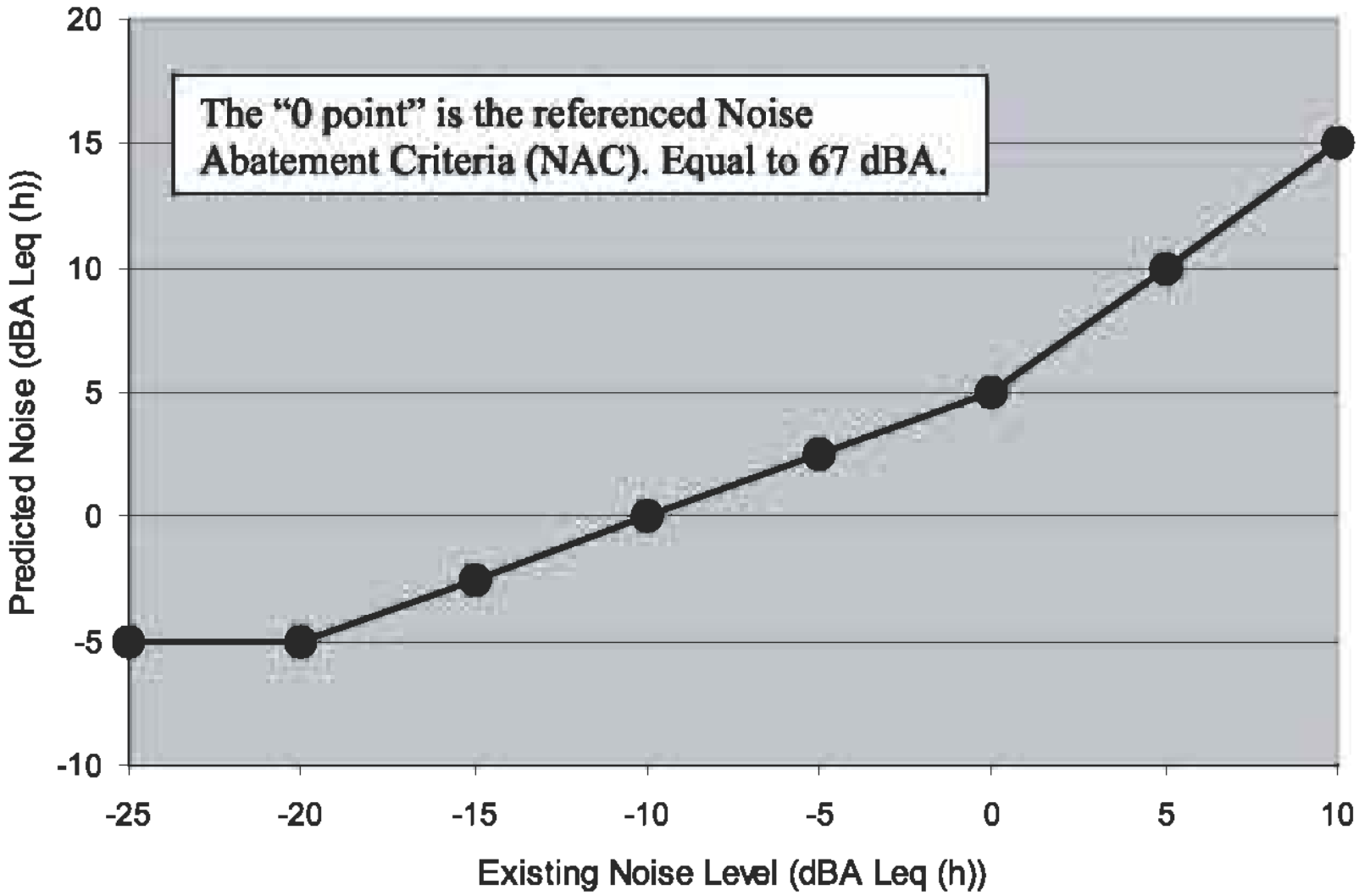


FIGURE 3.9.1-1
Substantial Noise Increase for Hospital Land Use

3.9.2 Existing Conditions

Environmental noise levels were monitored at several locations within and surrounding the hospital complex (Figure 3.9.2-1, *Noise Measurement Locations*). These measurements were made on October 5, 2004 (between 10:00 a.m. and 3:30 p.m.), and October 6, 2004 (between 1:30 p.m. to 4:30 p.m.). Noise levels at the site are dominated by vehicular traffic and occasional aircraft, barking dogs, lawnmowers, etc.

The sound-level meter measures and displays the equivalent noise level, as well as the maximum and the minimum noise levels during the measurement period. The data thus collected were analyzed to determine the L_{eq} level at each measurement location within and surrounding the site (Appendix I). The results of the monitoring and calculations were used as the basis for characterizing the ambient noise environment (Table 3.9.2-1, *Ambient Noise Levels*).

TABLE 3.9.2-1
AMBIENT NOISE LEVELS

Location	L_{eq} (dBA)
A (East side of Atlantic Avenue near medical office building)	72
B (South of Miller Children's Hospital)	59
C (Northeast intersection of Atlantic Avenue and Patterson Street)	71
D (Parking lot north of Ranch House)	55
E (27th Street between Ranch House and medical office building)	63
F (Southwest corner of 27th Street and North Pasadena Avenue)	60
G (Southwest corner of Long Beach Boulevard and East Canton Street)	65
H (Northwest corner of Spring Street and Long Beach Boulevard)	66
I (Northeast corner of Spring Street and Long Beach Boulevard)	58

Ambient noise levels at the project site range from L_{eq} 55 dBA to L_{eq} 72 dBA (Table 3.9.2-1). This range is deemed "conditionally acceptable" to "normally unacceptable" within the land use designation of "schools, libraries, churches, hospitals, nursing homes" (Table 3.9.1-1).

3.9.3 Significance Threshold

The potential for the proposed project to result in impacts related to noise was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

The proposed project would normally be considered to have a significant impact to noise when the potential for any one of the following six thresholds occurs:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Exposure of persons to or generation of excessive ground-borne vibration
- A substantial permanent increase in ambient noise levels in the proposed project vicinity above levels existing without the proposed project

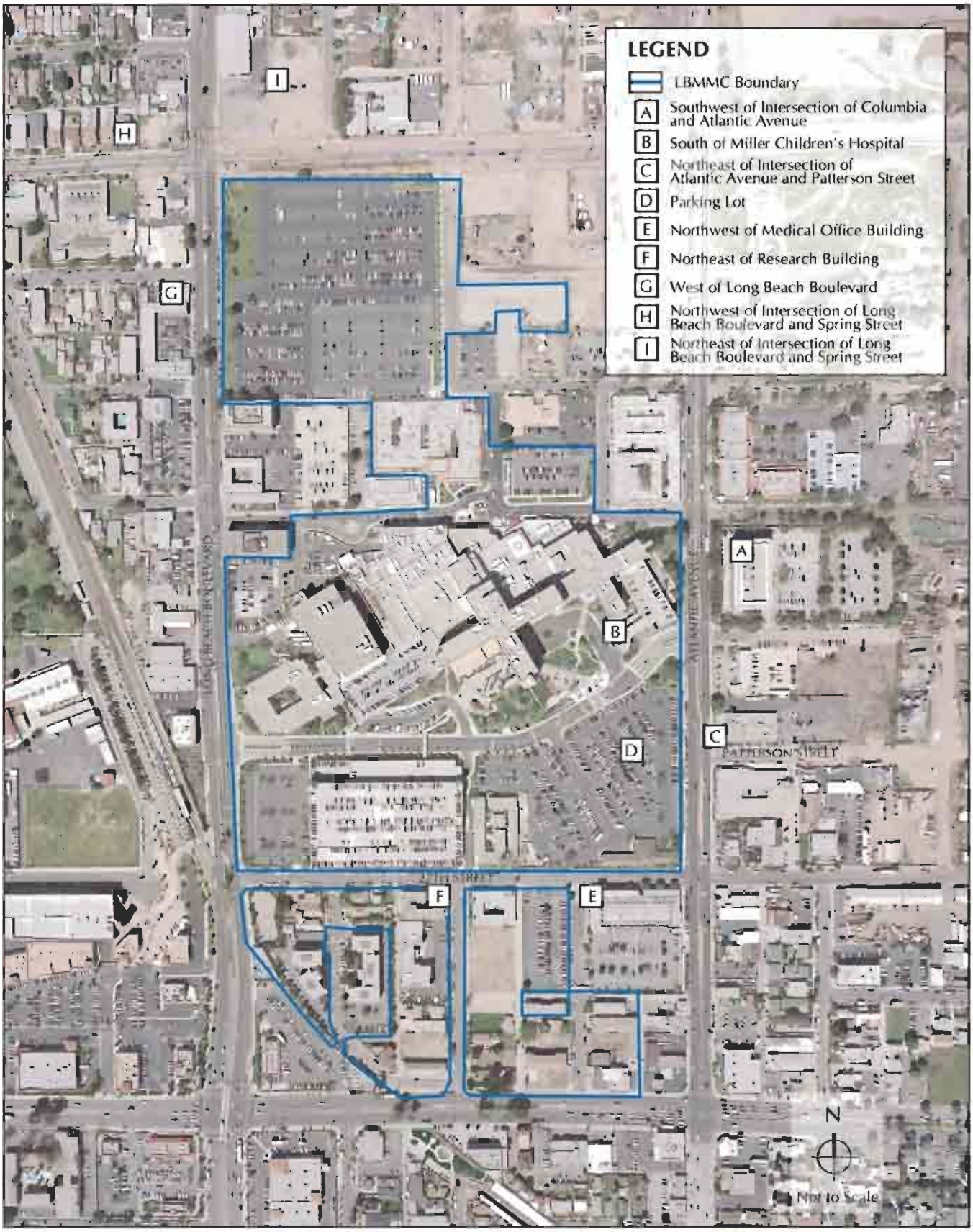


FIGURE 3.9.2-1
Noise Measurement Locations

- A substantial temporary or periodic increase in ambient noise levels in the proposed project vicinity above levels existing without the proposed project

- For a proposed project located within an airport land use plan or where such a plan has not been adopted within 2 miles of a public airport, exposure of persons residing or working in the proposed project area to excessive noise levels

- For a proposed project within the vicinity of a private airstrip, exposure of persons residing or working in the proposed project area to excessive noise levels

The significance of impacts to the ambient noise environment was considered in relation to the magnitude of the CNEL increase and the potential to change the community noise exposure category (Table 3.9.3-1, *Ambient Noise Significance Thresholds*). For the purpose of this analysis, the exposure of persons to or generation of noise level in excess of standards established was determined on the basis of the following:

- Operational noise levels: Long Beach Municipal Code
- Construction noise levels: Long Beach Municipal Code and City of Long Beach General Plan
- Operational vibration levels: Long Beach Municipal Code
- Construction vibration levels: No specific requirements
- Roadway noise: Caltrans guidelines
- Aircraft noise: CCR and City of Long Beach Airport Noise Compatibility Ordinance

TABLE 3.9.3-1
AMBIENT NOISE SIGNIFICANCE THRESHOLDS

CNEL Increase	Category Change	Significant Impact?
5 dBA or more	No	Yes
3 to 4 dBA	No	Yes
3 to 4 dBA	Yes	No
0 to 3 dBA	No	No

In addition to these requirements, it is important to consider ambient noise level increases. Ambient noise levels are most appropriately defined in terms of CNEL values because these account for a full day of noise exposure adjusted for community receptors.

If a given area is characterized by a quiet noise environment and a new noise source is introduced that increases the noise exposure in the area without violating the Long Beach Municipal Code noise standards, then a noise impact may still occur. However, objective standards for evaluating such impacts to the ambient noise level have not been adopted formally within the City of Long Beach or the State of California.

It is generally accepted among environmental professionals that most people would consider an increase in the existing ambient CNEL of 5 dB or more as noticeable. Therefore, a CNEL increase of 5 dBA or more is generally considered to be a significant environmental impact. A change in the CNEL value from 3 to 5 dBA may be noticed by some and is generally considered an adverse impact to those persons. These conditions could lead to complaints but are not considered significant environmental impacts because they would not generally be considered a substantial change. Changes in the CNEL

values of less than 3 dBA are generally not noticeable and are also not considered to be significant impacts.

An exception to the above criteria for an ambient noise level increase of less than 5 dBA to be considered less than significant may occur based on the consideration of the Land Use Compatibility Matrix developed by the State of California (Table 3.9.1-1). Although an increase in CNEL values of 3 to 4 dBA is not considered to be a significant impact to ambient noise levels by itself, if there is a category change in the Land Use Compatibility Matrix, the overall impact would be considered significant. For example, a category change would occur if the CNEL value moves from normally acceptable to conditionally acceptable when the existing CNEL value is combined with the expected increase in the ambient noise level.

A proposed project would result in a significant noise impact if the project were to result in the exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels. The requirement of the County Noise Control Ordinance regarding vibration is that motion velocities do not exceed 0.01 inch/second over the range of 1 to 100 Hertz (Table 3.9.3-2, *Ground-Borne Vibration Significance Thresholds*).

TABLE 3.9.3-2
GROUND-BORNE VIBRATION SIGNIFICANCE THRESHOLDS

Criterion
Motion velocities do not exceed 0.01 inch/second over the range of 1 to 100 Hertz.
Impact will be considered significant if the predicted noise levels at the nearest land designation are equal to or above the criterion indicated.

3.9.4 Impact Analysis

This section analyzes the potential for significant impacts to occur from noise that would be generated from the implementation of the proposed project. A project's noise impacts can be separated into long-term permanent impacts from project operations and short-term impacts due to construction.

Direct and Indirect Impacts

Construction Impacts

Construction activities are normally carried out in phases utilizing different pieces of equipment. Noise associated with construction of the proposed project or one of the alternatives may result in short-term audible noise levels within the proposed project site and the surrounding area.

The A-weighted noise measurements made at 50 feet for various types of construction equipment expected to be used on the proposed project site were used as the basis for analyzing construction impacts on the ambient noise environment (Table 3.9.4-1, *Measured A-Weighted Noise Levels in dB for Various Types of Construction Equipment at 50 Feet*).

TABLE 3.9.4-1
MEASURED A-WEIGHTED NOISE LEVELS IN dB FOR VARIOUS TYPES OF CONSTRUCTION EQUIPMENT AT 50 FEET

Type	A-Weighted Noise Level (dBA)
Dozers	77
Water trucks	81
Graders	76
Dump trucks	75
Scrapers	76
Front-end loaders	75

In addition, the evaluation of potential noise impacts considered the proximity of each element of the proposed project to sensitive receptors (Table 3.9.4-2, *Nearest Sensitive Receiver(s) for Project Elements*).

TABLE 3.9.4-2
NEAREST SENSITIVE RECEIVER(S) FOR PROJECT ELEMENTS

Proposed Project	Nearest Sensitive Receiver(s)
Todd Cancer Institute (TCI), Phases I and II	School located across Long Beach Boulevard, single-family residence north of Long Beach Boulevard and Spring Street
Miller Children's Hospital (MCH) pediatric inpatient tower, Phases I and II	Medical office building across Atlantic Avenue, MCH
MCH pediatric impatient tower, utility trench	Convalescent home
MCH pediatric impatient tower, central plant	Medical office building across 27th Street
MCH link building	Medical office building across Atlantic Avenue
MCH pediatric outpatient building	Medical office building across Atlantic Avenue
Roadway realignment	Medical office building across Atlantic Avenue

Evaluation of construction noise is divided into allowable construction hours and construction activities.

- As per the Long Beach Municipal Code (Section 8.80.202), construction would be permitted within the hours indicated below. Variance would be required outside of the following hours:
    - Weekdays: 7:00 a.m. to 7:00 p.m.
    - Saturdays: 9:00 a.m. to 6:00 p.m.
    - Sundays: No construction is permitted.

- Construction Noise: Construction noise would occur in discreet phases. Average noise levels associated with various construction phases were calculated for all pertinent equipment that would present and operating at a reference distance of 50 feet (Table 3.9.4-3, *Construction Activity Noise Levels at 50 Feet*). The range of predicted noise levels at the nearest sensitive receivers for each proposed project element was estimated for each phase of construction (Table 3.9.4-4, *Construction Noise for Different Projects at Nearest Sensitive Receptors*). The potential for adverse impacts on sensitive receptors to occur would be possible in Phases 4 and 9 of construction.

TABLE 3.9.4-3
CONSTRUCTION ACTIVITY NOISE LEVELS AT 50 FEET

Activity	Noise Level at 50 Feet (dBA)
Ground clearing (demolition and grading)	84 dBA
Excavations	89 dBA
Foundations	78 dBA
Erection of structures	85 dBA
Finishing (i.e., paving)	89 dBA

TABLE 3.9.4-4
CONSTRUCTION NOISE FOR DIFFERENT PROJECTS AT NEAREST SENSITIVE RECEPTORS

Activity	Project and Impacted Receiver								
	1	2	3	4	5	6	7	8	9
Ground clearing	62	58	67	84	67	67	67	67	74
Excavations	67	63	72	89	72	72	72	72	79
Foundations	56	52	61	75	61	61	61	61	68
Erection of structures	63	59	68	85	68	68	68	68	75
Finishing (i.e., paving)	67	63	72	89	72	72	72	72	79
Permitted construction level	75	70	75	75	75	75	75	75	75

1	TCI–Impact on school located across Long Beach Boulevard
2	TCI–Impact on single-family residence north of Long Beach Boulevard /Spring Street
3	Pediatric inpatient tower–Impact on medical office building across Atlantic Avenue
4	Pediatric inpatient tower–Impact on MCH
5	Link building–Impact on medical office building across Atlantic Avenue
6	Pediatric outpatient building–Impact on medical office building across Atlantic Avenue
7	Roadway realignment–Impact on medical office building across Atlantic Avenue
8	Utility trench–Impact on convalescent home across Atlantic Avenue
9	Central plant building–Impact on medical office building across 27th Street

In summary:

- Todd Cancer Institute (TCI): The construction of this proposed project element would not be expected to have any negative noise impact; therefore, no mitigation measures are required.

- Miller Children's Hospital (MCH) pediatric inpatient tower: The construction of this proposed project element would not be expected to have any negative noise impact on the medical office buildings across the street but would have a negative impact on the existing MCH building located within 50 feet of the proposed project element. The negative impact would occur during the ground clearing, excavation, erection, and finishing phases of the proposed project element. Noise reduction of 5 to 14 dBA would be required to reduce inputs to below the level of significance.

- Miller Children's Hospital pediatric outpatient building, link building, and utility trench; and the roadway realignment: The construction of these proposed project elements would not have any negative noise impact; therefore, no mitigation measures are required.

- Miller Children's Hospital central plant building: The construction of this proposed project element would have a negative noise impact during the excavation and the finishing phases of the proposed project, and a noise reduction of 4 dBA would be required during these phases of construction to reduce impacts to below the level of significance.

Actual noise levels associated with construction of the proposed project would vary widely during the course of construction depending on where the equipment was located and what pieces of equipment were in use at any one time. Maximum noise levels associated with all construction equipment operating at the same time would probably never occur during construction. Typically, noise levels from construction activities on a project such as this would range from 65 dBA to 75 dBA at a distance of 50 feet within the proposed project site or 50 feet from the property line of the construction site to the surrounding area. This would translate to noise levels that do not exceed 65 dBA at the closest residential property, which is located to the northwest of the site. Therefore, construction activities at the proposed project site would comply with the requirements of the Long Beach Municipal Code.

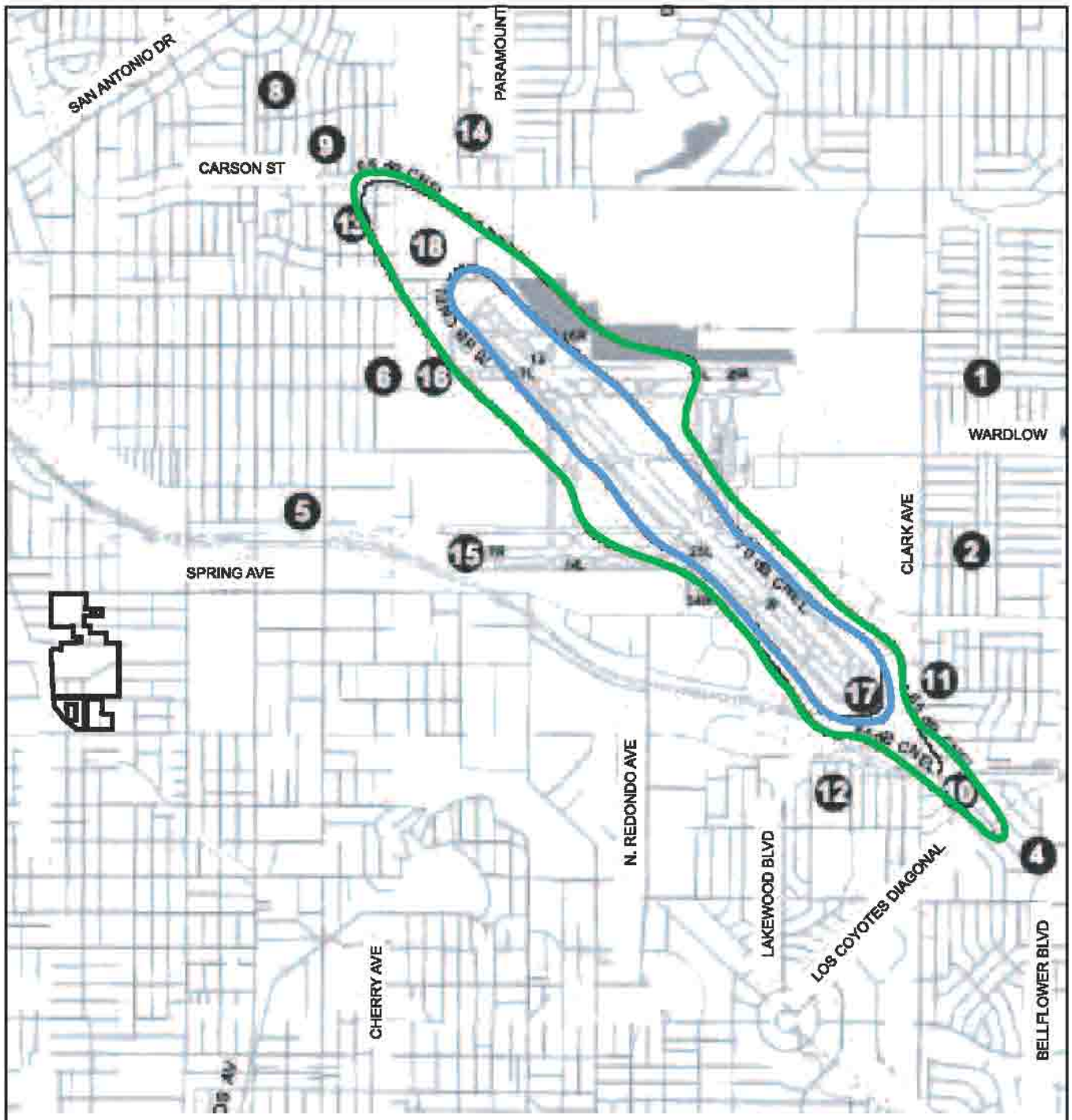
Aircraft Noise Generation

The proposed project would not be expected to result in impacts to noise in relation to public airports. The nearest public airport/public use airport is the Long Beach Airport located more than 1.8 miles to the north. The proposed project site is well outside the 65-dBA CNEL contour boundaries (Figure 3.9.4-1, *65-dBA CNEL Contour*). Therefore, there would be no expected impacts on people working in the proposed project area from noise related to public airports.

The proposed project would not be expected to result in impacts to noise in relation to private airstrips. According to the Thomas Guide[7] and the U.S. Geological Survey (USGS) map,[8] there are no

[7] Thomas Bros. Maps. 2003. *The Thomas Guide: 2003 Los Angeles and Ventura Counties*. Contact: Thomas Bros. Maps, 8255 North Central Park, Skokie, IL 60076.

[8] C.W. Jennings. Revised 1992 (1962). USGS Geologic Map of California, Long Beach Sheet (Olaf P. Jenkins Edition). Capitol Heights, MD: Williams & Heintz Map Corporation.



SOURCE: VSA n Associates, 2004

LEGEND

- 1 Airport Noise Monitoring Locations
- Campus Boundary
- 65-dBA CNEL Contour
- 70-dBA CNEL Contour

FIGURE 3.9.4-1
65-dBA CNEL Contour

private airports within 2 miles of the proposed project area. Based on the frequency of flights and the type of aircraft, there are no expected impacts on people working in the proposed project area from noise related to private airstrips.

Construction and operation of the proposed project elements would not be expected to result in significant impacts due to excessive noise related to air traffic. The proposed project would not be located within an airport land use plan for a public airport, public use airport, or private airstrip according to the County of Los Angeles General Plan.[9] The Long Beach Airport and the Torrance Airport are the nearest public airports to the proposed project site, located approximately 1.8 miles and 10 miles from the proposed project site, respectively.[10] Although located within 1.8 miles of the Long Beach Airport, site-specific data demonstrated that the proposed project site is located outside the 65-dBA CNEL Contour. There are no private airstrips located within an approximate 10-mile radius of the proposed project. Therefore, significant impacts due to excessive noise related to air traffic would not be expected to occur.

Ambient Noise Levels

Temporary and/or periodic noise sources would include demolition and construction activities. The substantial increase level based on measured ambient levels was calculated (Table 3.9.4-5, *Construction Activity Noise Levels at Resident Across Quill Street*).

TABLE 3.9.4-5
CONSTRUCTION ACTIVITY NOISE LEVELS
AT RESIDENCE ACROSS QUILL STREET

Activity	Project and Impacted Receiver								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Ground clearing	62	58	67	84	67	67	67	67	74
Excavations	67	63	72	89	72	72	72	72	79
Foundations	56	52	61	75	61	61	61	61	68
Erection of structures	63	59	68	85	68	68	68	68	75
Finishing (i.e., paving)	67	63	72	89	72	72	72	72	79
Substantial increase level	70	63	77	64	76	76	76	76	68

1	TCI–Impact on school located across Long Beach Boulevard
2	TCI–Impact on single-family residence north of Long Beach Boulevard/Spring Street
3	Pediatric inpatient tower–Impact on medical office building across Atlantic Avenue
4	Pediatric inpatient tower–Impact on MCH
5	Link building–Impact on medical office building across Atlantic Avenue
6	Pediatric outpatient building–Impact on medical office building across Atlantic Avenue
7	Roadway realignment–Impact on medical office building across Atlantic Avenue
8	Utility trench–Impact on convalescent home across Atlantic Avenue
9	Central plant building–Impact on medical office building across 27th Street

[9] County of Los Angeles, Department of Regional Planning. 1993. *Streamlined County of Los Angeles General Plan*. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

[10] Automobile Club of Southern California, Travel Publications Department. 2000. *Los Angeles County Metropolitan Area*. Contact: 2601 South Figueroa Street, Los Angeles, CA 90007.

In summary:

- TCI Phases I and II: The construction of this proposed project element would not be expected to have any negative noise impact; therefore, no mitigation measures would be required.

- MCH pediatric inpatient tower: The construction of this proposed project element would not be expected to have any negative noise impact on the medical office buildings across the street but would be expected to have a negative impact on the existing MCH building located within 50 feet of the proposed project element. The negative impact would occur during all construction phases of the proposed project. Noise reduction of 11 to 25 dBA would be required to reduce impacts to below the level of significance.

- MCH pediatric outpatient building, link building, and utility trench; and the roadway realignment: The construction of these proposed project elements would not be expected to have any negative noise impact; therefore, no mitigation measures would be required.

- MCH central plant building: The construction of this proposed project element would be expected to have a negative noise impact during the ground clearing, excavation, erection, and the finishing phases of the proposed project element. Noise reduction of 1 to 11 dBA would be required during these phases of construction to reduce impacts to below the level of significance.

The proposed project would result in less than significant impacts from noise related to a permanent increase in the ambient noise level in the proposed project vicinity above levels existing without the proposed project.

Permanent increase in the noise levels would occur from operations of the building and additional roadway noise (Table 3.9.4-6, *Permanent Noise Levels from Different Projects at Sensitive Receptors*). The long-term operational noise levels would be below the substantial increase level. Therefore, the operational impacts on ambient noise levels would be below the threshold for significance.

TABLE 3.9.4-6
PERMANENT NOISE LEVELS FROM DIFFERENT PROJECTS AT SENSITIVE RECEPTORS

Activity		Project and Impacted Receiver								
		1	2	3	4	5	6	7	8	9
Predicted		27	24	32	50	32	32	32	32	40
Substantial increase level		70	63	77	64	76	76	76	76	68
1	TCI–Impact on school located across Long Beach Boulevard									
2	TCI–Impact on single-family residence North of Long Beach Boulevard/Spring Street									
3	Pediatric inpatient tower–Impact on medical office building across Atlantic Avenue									
4	Pediatric inpatient tower–Impact on MCH									
5	Link building–Impact on medical office building across Atlantic Avenue									
6	Pediatric outpatient building–Impact on medical office building across Atlantic Avenue									
7	Roadway realignment–Impact on medical office building across Atlantic Avenue									
8	Utility trench–Impact on convalescent home across Atlantic Avenue									
9	Central plant building–Impact on medical office building across 27th Street									

Permanent increases in the ambient noise level would be generated from the operation of the buildings at the proposed project site and additional traffic generated by the proposed project. The impact to noise related to temporary or periodic increase in the ambient noise level in the proposed project vicinity is expected to be reduced to below the level of significance with the incorporation of mitigation measures.

Construction, demolition, and maintenance activities would also result in temporary and periodic increases, respectively, in the ambient noise level. The noise level expected from operation of the proposed project would be approximately 50 dBA at 50 feet, and 89 dBA at 50 feet during construction and maintenance activities, assuming a worst-case scenario.

Due to noise attenuation, noise levels would not exceed 72 dBA at MCH within the proposed project site. Therefore, construction activities at the proposed project site would comply with the requirements of the Long Beach Municipal Code. However, with mitigation measures, construction noise activities could be reduced to below the level of significance.

Ambient daytime noise levels at the nearest off-site sensitive receptor, which is the convalescent home across Atlantic Avenue, would be approximately 71 dBA. Therefore, ambient noise levels would not temporarily interfere with activities at the convalescent home for the duration of construction.

Ground-Borne Vibration

The proposed project elements would be expected to experience less than significant impacts to noise in relation to generation of excessive ground-borne vibration or ground-borne noise. Vibration from building operations would be minimal and well below the criteria, based on typical vibration levels at 100 feet from a similar 4-story building. Although vibration levels would vary depending on design and soil conditions, noise and vibration data for similarly designed buildings indicate that the vibration levels would be below the threshold of significance. Therefore, there are no expected impacts to noise related to generation of excessive ground-borne vibration or ground-borne noise.

The requirements of the Long Beach Municipal Code concerning vibration are that motion velocities do not exceed 0.01 inch/second over the range of 1 to 100 Hertz. Ground-borne vibration levels typically associated with pile-driving activities, blasting, and major grading activities can exceed this vibration threshold level at distances within 100 feet. However, because there would be pile-driving, blasting, or mass grading activities at the proposed project site, perceptible ground vibration at sensitive receptors and other locations off site would be possible.

Operational Impacts

The proposed project would result in a less than significant impact from noise related to exposure to or generation of excessive ground-borne vibration. Significant ground-borne vibration and noise levels are based on 0.001 g's[11] in the frequency range between 1 and 30 hertz and 0.003 g's in the frequency range between 30 and 100 hertz.[12] The vibration generated during building operations would be minimal (i.e., less than 0.0005 g's in the frequency range of 1 and 30 hertz and less than 0.0015 g's in the frequency range between 30 and 100 hertz) and well below the criteria. Operations of the proposed project are not expected to generate noise levels that exceed the threshold of significance. Most of the operations-related noise would be confined to indoor spaces.

Traffic Generation Impacts

The analysis of noise from additional trips generated by the proposed project was based on the hourly peak noise levels. The increase in noise levels at all locations around the proposed project was less than 1 dB, which will not be perceived.

3.9.5 Cumulative Impacts

The incremental impact of the combined components of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, Project Description, would not result in significant cumulative impacts from noise. The proposed project area does not currently experience noise levels in excess of the Long Beach Municipal Code standards. The related projects identified also would not create excessive noise or ground-borne vibration within the proposed project vicinity. Sound attenuates over distance. Because the proposed project is separated from all related projects by at least 0.25 mile, the incremental effect of the proposed project in combination with the related projects would not elevate the ambient noise level above the Long Beach Municipal Code standards. Similarly, the proposed project would not contribute to cumulative impacts from the related impacts that would result in a category change in the Land Use Compatibility Matrix. Therefore, there would not be anticipated cumulative impacts from noise.

3.9.6 Mitigation Measures

Although there is no mitigation measure that would completely eliminate potential noise generation from construction, the specified mitigation measures would reduce noise impacts to less than significant levels.

[11] The symbol *g* is the average acceleration produced by gravity at sea level, and it is often used as a unit of acceleration approximately equal to 9.8 meters per second per second.

[12] VSA n Associates, Inc. 8 October 2004. *Long Beach Memorial Medical Center Expansion Noise Impact Analysis*. Contact: VSA n Associates, Inc., 12525 Lambert Road, Whittier, CA 90606.

Measure Noise-1

The City of Long Beach shall minimize the potential for construction noise levels to exceed the City of Long Beach Noise Ordinance by requiring the construction contractor to properly maintain all heavy equipment used for construction of each element of the proposed project: Todd Cancer Institute Phases I and II; Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; road realignment; and parking. Prior to the completion of final plans and specifications, the City of Long Beach shall ensure that the plans and specifications include a requirement that all construction equipment shall be properly maintained. All vehicles and compressors shall utilize exhaust mufflers. Engine enclosure covers as designed by the manufacturer shall be in place at all times. The City of Long Beach shall monitor the use of heavy equipment during construction to ensure conformance with the requirements of properly maintained heavy equipment.

Measure Noise-2

The City of Long Beach shall minimize the potential for construction noise levels to conflict with the City of Long Beach Noise Ordinance by requiring the plans and specifications to specify restricted periods for grading and construction for each element of the proposed project: Todd Cancer Institute Phases I and II; Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench; MCH pediatric outpatient building; MCH link building; road realignment; and parking. Prior to the completion of final plans and specifications, the City of Long Beach shall ensure that the plans and specifications include a provision that restricts grading and construction activities to daily operation from 7:00 a.m. to 7:00 p.m., Monday through Friday, and from 8:00 a.m. to 5:00 p.m. on Saturdays. There should be no work on Sundays or federal holidays.

Measure Noise-3

The City of Long Beach shall require that the plans and specifications for the Miller Children's Hospital pediatric inpatient tower and the central plant building require that construction equipment shall be equipped with state-of-the-art noise-muffling devices. Barriers or curtains shall be required to be installed close to equipment to shield the equipment from the receiver. The height and length of the barriers or curtains shall be determined based on location of construction activity and receiver.

Because of the close proximity of the source and receiver, the impact would be dependent on the location of the noise sources. Prior to the start of construction, the contractor shall develop a noise control plan based on actual equipment to be used and location of various activities. If actual equipment noise levels are not available, equipment noise levels shall be measured in the field. The plan should predict the noise levels with the actual equipment and with the barriers or curtains in place. The plan shall take into consideration the order of construction and equipment mix. Equipment mix and/or the number of equipment operating shall be considered in reducing the noise levels.

3.9.7 Level of Significance after Mitigation

Implementation of mitigation measures Noise-1 through Noise-3 would reduce potential impacts related to noise to below the level of significance.

3.10 PUBLIC SERVICES

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to public services. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to fire protection, police protection, schools, parks, and other services, as well as to identify potential alternatives.

The analysis of public services includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential impacts to public services have been analyzed in accordance with the methodologies provided by the City of Long Beach General Plan,[2] published maps, the City of Long Beach Municipal Code,[3] the California Health and Safety Code,[4] the available information from the City of Long Beach,[5] and communications both with the City of Long Beach[6] and service provider officials.[7,8]

3.10.1 Regulatory Framework

The proposed project site is owned by the Long Beach Memorial Medical Center (LBMMC), falls within the jurisdiction of the City of Long Beach, and is subject to the City of Long Beach General Plan.[9] The proposed project is required to comply with the City's land use policies, ordinances, and regulations. The City of Long Beach Municipal Code[10] applies to the land within the proposed

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[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

[4] Office of Statewide Health Planning and Development. 1994. Senate Bill 1953, Chapter 740, Amendment to the Alfred E. Alquist Hospital Seismic Safety Act of 1983, Sections 130000 through 130070. Available at: http://www.oshpd.cahwnet.gov/SB1953/index.htm

[5] City of Long Beach. 9 July 2004. "City of Long Beach Departments and Municipal Services." Available at: http://www.ci.long-beach.ca.us/depts./default.asp

[6] Anita Garcia, *Personal Communication*, 8 July 2004. City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[7] Allan Patalano, *Personal Communication*, 8 July 2004. City of Long Beach, Fire Department, 3917 Long Beach Boulevard, Long Beach, CA 90807.

[8] Michael Weber, *Personal Communication,* 25 October 2004. City of Long Beach, Police Department, 100 Long Beach Boulevard, Long Beach, CA 90802.

[9] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Contact: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[10] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

project area. The proposed project also must comply with the California Health and Safety Code. The consideration of state and city standards allows the EIR to fulfill its intended purpose as an informational document.

State

The Leroy F. Greene School Facilities Act of 1998, Senate Bill 50

The Leroy F. Greene School Facilities Act of 1998, Senate Bill (SB) 50, signed into law in August 1998, became fully effective with the approval of State Proposition 1A on November 3, 1998. SB 50 describes three levels of fees that can be statutorily levied against a project for mitigation of school facilities. SB 50 declares that payment of the specified development fees, where necessary, is full and covers complete mitigation for impacts to school facilities and prohibits a public agency from denying a legislative or adjudicative act on the basis of refusal to provide mitigation of school facilities that exceeds the amounts authorized by SB 50. The proposed project is not located within, or immediately adjacent to, an existing or proposed school site; therefore, SB 50 would not pertain to the proposed project.

Local

City of Long Beach General Plan

The Public Safety element of the City of Long Beach General Plan identifies goals and polices for public services related to fire protection and crime prevention.

Fire Protection

The Public Safety element of the City of Long Beach General Plan recognizes the importance of ensuring that fire facilities and protective services are sufficient for the existing and future population and land uses of the City. These focus on reducing threats to public safety through the protection of property and wildlands from fire through the review of projects and development proposals and on following the City's fire prevention standards and mitigation measures. The Public Safety element of the City of Long Beach General Plan recognizes the importance of continuously reviewing and reevaluating plans to meet fire protection needs resulting from changing conditions.

This document also establishes the importance of continued efforts to reduce all fire hazards while placing special emphasis on reducing hazards associated with fire-prone industrial facilities, old and deteriorating structures, and multistory buildings.

The proposed project is within the boundaries of the City of Long Beach; therefore, it falls under the land use guidance of the City of Long Beach General Plan. The City has adopted the policy to review significant development projects and General Plan amendments. The City also requires decision makers to make findings on the impacts that a project or land use plan change may have on fire protection services.

Police Protection

The Public Safety element of the City of Long Beach General Plan recognizes the importance of preventing crimes through physical planning and emphasizes the importance of continued efforts for incorporating security factors into the existing and new buildings. These efforts need to focus on reducing threats to public safety through the review of projects and development proposals. The Public Safety element requires the Planning Department to maintain a liaison with law enforcement and the Fire, Building and Safety, and Community Development Departments.

Schools

According to the City of Long Beach General Plan, schools are to be in locations complementary to existing land uses, recreational facilities, and the community identity.

Libraries

According to the City of Long Beach General Plan, the City will make efforts to assist the City of Long Beach Library Department in providing library services that respond to the needs of the community.

3.10.2 Existing Conditions

Fire Protection

The Long Beach Fire Department (LBFD) provides fire protection services to the LBMMC campus (Campus). The LBFD has a staff of 502 uniformed personnel and 483 civilian support staff members. LBFD staff is responsible for carrying out a variety of emergency response duties in the City of Long Beach:

- Fire prevention
- Firefighting
- Emergency medical care
- Technical rescue
- Hazardous materials mitigation
- Disaster response
- Public education
- Community service

A professionally trained staff of 502 firefighters (including 24 paramedic-trained personnel) is on duty at all times at 23 neighborhood fire stations located across the LBFD's approximately 55-square-mile jurisdiction.

There are six fire stations within a 2-mile radius of the proposed project (Figure 3.10.2-1, *Public Services Near the Proposed Project*). The nearest three fire stations provide primary and secondary response to the Campus (Table 3.10.2-1, *Existing Fire Stations Serving the Proposed Project Site*). Fire Station No. 7 is located at 2295 Elm Avenue, 0.5 mile south of the Campus. It is the primary emergency responder for the Campus. Fire Station No. 9 is located approximately 1.2 miles north of the Campus and serves as the secondary emergency responder for the Campus. Fire Station No. 16 also serves the Campus and is located approximately 2.0 miles west of the Campus.

LONGFELLOW ELEMENTARY SCHOOL
LONG BEACH BRETHREN ELEMENTARY SCHOOL
LOS CERRITOS ELEMENTARY SCHOOL
LOS CERRITOS PARK
BIRNEY ELEMENTARY SCHOOL
SILVERADO PARK
WEBSTER ELEMENTARY SCHOOL
MUIR, JOHN ELEMENTARY SCHOOL
STEPHENS, W L MIDDLE SCHOOL
HARTE LIBRARY
JACKIE ROBINSON ACADEMY
OAKWOOD SCHOOL
HUDSON ELEMENTARY SCHOOL
SAINT LUCY ELEMENTARY SCHOOL
LAFAYETTE ELEMENTARY SCHOOL
HUDSON PARK
SAVANNAH ACADEMY HIGH SCHOOL
ADMIRAL KIDD PARK
CABRILLO HIGH SCHOOL
GARFIELD ELEMENTARY SCHOOL
HOLY INNOCENTS SCHOOL
GEORGE WASHINGTON MIDDLE SCHOOL
DRAKE PARK
LONG BEACH POLYTECHNIC HIGH SCHOOL
VETERANS MEMORIAL PARK
BIXBY KNOLLS PARK
HUGHES MIDDLE SCHOOL
SAINT BARNABAS SCHOOL
SOMERSET PARK
DANA LIBRARY
RESERVOIR PARK
FIRE STATION 16
BURNETT ELEMENTARY SCHOOL
BURROUGHS ELEMENTARY SCHOOL
WESTERLY SCHOOL
SIGNAL HILL ELEMENTARY SCHOOL
SIGNAL HILL PARK
ALVARADO ELEMENTARY SCHOOL
LONG BEACH PREPARATORY ACADEMY
CHITTICK FIELD PARK
HILLBROOK PARK
LEE ELEMENTARY SCHOOL
ORIZABA PARK
BUTLER ELEMENTARY SCHOOL
WHITTIER ELEMENTARY SCHOOL
MARTIN LUTHER KING JR PARK
MACARTHUR PARK
LINCOLN ELEMENTARY SCHOOL
CALIFORNIA RECREATION CENTER PARK
SAINT JAMES ACADEMY
LONG BEACH COMMUNITY SERVICE CENTER
REID HIGH SCHOOL
INTERNATIONAL ELEMENTARY SCHOOL
LONG BEACH CIVIC CENTER
FIRE STATION 9
FIRE STATION 7
FIRE STATION13
FIRE STATION 10
FIRE STATION 3
BURNETT LIBRARY
14TH STREET PARK
FIRST BAPTIST CHURCH SCHOOL
FIRST BAPTIST CHURCH SCHOOL
ROOSEVELT ELEMENTARY SCHOOL
WEST DIVISION POLICE STATION

N

0 0.5 1 Miles

Data Source: Thomas Brothers, City of Long Beach

Library
Junior High/High School
Elementary/Middle School
Civic Center
Fire Station
Police Station
2-Mile Radius from Site
LBMMC Campus
City of Long Beach
City of Signal Hill
Park

FIGURE 3.10.2-1

Public Services Near the Proposed Project

TABLE 3.10.2-1
EXISTING FIRE STATIONS SERVING THE PROPOSED PROJECT SITE

Fire Station	Location	Personnel and Equipment	Distance to Site
No. 7	2295 Elm Avenue Long Beach, CA 90806	12 personnel, task force truck and engine company, paramedic rescue ambulance—battalion headquarters	0.5 mile
No. 9	3917 Long Beach Boulevard Long Beach, CA 90807	11 personnel, task force truck and engine company, paramedic rescue ambulance—EMT	1.2 miles
No. 16	2890 East Wardlow Road Long Beach, CA 90807	16 personnel, task force truck and engine company, paramedic rescue ambulance—EMT rescue ambulance—division headquarters	2 miles

Police Protection

Police protection in the City of Long Beach is provided by the Long Beach Police Department (LBPD). The LBPD is responsible for providing police service to 460,000 residents[11] in an area encompassing approximately 55 square miles.[12] It is divided into four divisions, groups, units, or sections, and the LBPD is overseen by the Board of Police Commissioners. A representative of the West Division confirmed that police protection services in the proposed project area are currently provided by the LBPD West Division (Figure 3.10.2-1) located at 1835 Santa Fe Avenue. The West Division has a deployment of 104 sworn officers and 24 support staff members who work in three shifts. The West Division is responsible for all police operations in downtown Long Beach. This area has a population of 120,000 residents, which covers approximately 12.9 square miles. The average citywide police response time in Long Beach is 5 minutes. In the West Division, the average response time is 4.4 minutes to the first priority call. The LBPD has plans to construct a new police station, North Long Beach Police Station, near the Campus at 4891 Atlantic Avenue.

Schools

The Campus is within the boundaries of the Long Beach Unified School District (LBUSD). The LBUSD has a total enrollment of 97,000 students, including adult schools and children centers in the Cities of Long Beach, Lakewood, Signal Hill, and Avalon (Catalina Island). Of these students, 95,483 are enrolled in K–12 programs. The LBUSD employs a total of 10,797 personnel, including 5,345 regular full-time teachers.[13] The LBUSD has 62 elementary schools, 24 middle schools, and 9 high schools.[14,15] There are 29 school campuses within a 2-mile radius of the proposed project

[11] City of Long Beach, Department of Planning and Building. October 2002. *Open Space and Recreation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[12] Keith Colin, *Personal Communication*, 25 October 2004. City of Long Beach, Police Department, West Division, 100 Long Beach Boulevard, Long Beach, CA 90802.

[13] Mathew Reichardt, *Personal Communication*, 25 October, 2004. Senior Research Office Technician, Department of Research Planning and Evaluation, Long Beach Unified School District, 417 Atlantic Avenue, Long Beach, CA 90802.

[14] Long Beach Unified School District. 11 December 2003. *Waste Assessment Report: Long Beach Unified School District*. Available at: http://www.ciwmb.ca.gov/Schools/WasteReduce/AssessRpts/LBUSD/

[15] Mathew Reichardt, *Personal Communication*, 25 October, 2004. Senior Research Office Technician, Department of Research Planning and Evaluation, Long Beach Unified School District, 417 Atlantic Avenue, Long Beach, CA 90802.

site (Figure 3.10.2-1). The closest of these, Robinson Middle School, has an enrollment of about 923 students and is located at 2750 Pine Avenue, approximately 0.2 mile west of the proposed project site (Figure 3.10.2-1). Schools planned for construction near the proposed project site include an elementary school with a potential enrollment of 1,450 students that will be located south of Hill Street between Redondo Avenue and Obispo Avenue, and a middle school with a potential enrollment of 850 students that will be located west of Cherry Avenue and south of 20th Street.

Parks and Open Spaces

The proposed project elements are located within the existing Campus. There are 11 local and regional parks in the vicinity of the proposed project site (Figure 3.10.2-1), one of which, Veteran's Memorial Park, is located within a 1-mile radius of the proposed project site (Figure 3.10.2-1). Veteran's Park is located on 28th Street, west of the proposed project site. In addition to Veteran's Park, 10 local and regional parks are located within an approximate 2-mile radius of the proposed project site. To the northeast is Summerset Park; to the southeast are Hamilton Bowl, King Park, McArthur Park, and Calie Recreation Center; to the southwest are Drake Park, Admiral Kidd Park, and Hudson Park; and to the northwest are Silverado Park and Los Cerritos Park. Parks planned for construction near the proposed project site include the 11-acre Douglass Park at 3855 North Lakewood Boulevard and Long Beach Sports Park at 1000 East Spring Street.

Other Public Facilities

The proposed project is located 3.5 miles north of the Long Beach Civic Center and immediately west of the City of Signal Hills. This area is well served by public facilities, including post offices, public libraries, and hospitals (Figure 3.10.2-1). There are four post offices and four public libraries within approximately 2 miles of the proposed project site. The nearest post office is approximately 1 mile southeast of the proposed project site. The Burnett Branch Library is approximately 0.6 mile south of the proposed project site. The Long Beach Central Library is approximately 2.6 miles south of the proposed project site. The Dana Branch Library is 1 mile north of the proposed project site. The Bret Harte Branch library is 1.5 miles west of the proposed project site. The Mark Twain Branch Library planned for constructed at 1401 East Anaheim Street is 1.6 miles southeast of the proposed project site. Pacific Hospital of Long Beach is within 2 miles of the proposed project site. Medical offices planned for construction near the proposed project site are at 2702 Long Beach Boulevard, 3932 Long Beach Boulevard, 2760 Atlantic Avenue, and 2229 Pacific Avenue.

3.10.3 Significance Threshold

The potential for the proposed project to result in impacts to public services was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines.

The proposed project is normally considered to have a significant impact to public services if the project causes substantial adverse physical impacts associated with the provision of, or need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public services

3.10.4 Impact Analysis

Upon build-out, the proposed expansion of facilities and services would provide a full range of integrated medical facilities to the existing Long Beach community. The proposed project is subject to the City of Long Beach General Plan[16] policies and regulations. The Campus currently utilizes City of Long Beach emergency response services and other services. The elements of the proposed project have been designed to accommodate the community's need for hospital services consistent with population growth anticipation by the General Plan and known demographic trends for health care in the Los Angeles–Long Beach statistical area. The proposed project would not include the construction of housing. The proposed project would not provide infrastructure improvements that would expand the capacity for growth in the community beyond that anticipated by the General Plan. It is expected that the proposed project would generate additional demand for fire services in case of emergencies. Therefore, the proposed project would have a significant effect on fire protection and would require mitigation.

Fire Protection

Over the next 10 years, the proposed project would provide expanded services to the existing community. The added facilities would not increase or expedite the anticipated level of population growth within the region. However, implementation of the proposed project would be expected to result in less than significant impacts to fire protection. Development of new facilities as part of the proposed project would potentially place an additional burden on the existing primary and secondary emergency response units for fire company training, fire prevention inspections, and system maintenance. Additional staff to serve the proposed project site would be accommodated by one of the three existing fire stations. Thus, there would be a need to deputize an additional officer and expand one of the existing primary and secondary response stations. There would not be a need to construct a new fire station.

[16] City of Long Beach, Department of Planning and Building. July 1991. *General Plan Maps and Descriptions of Land Use Districts*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

Police Protection

Implementation of the proposed project would not be expected to result in significant impacts on police protection services, requiring the construction of new buildings. The LBPD Office of Operations and Planning estimates a need for two sworn officers per 1,000 persons[17] to provide adequate police protection. The proposed project consists of expanded facilities to serve the community and would not be expected to induce growth. An existing police station and an additional police station planned to be constructed at Atlantic Avenue would be sufficient to provide police protection in the proposed project area.

The Campus has an existing security plan[18,19]and lighting plan.[20] The existing security plan would be amended for each element of the proposed project. Similarly, the specifications of the lighting plan would be applied to each of the new developed elements of the Campus, including the pedestrian rates of travel between the designated proposed project area and newly constructed buildings. It is anticipated that the West Division could be adequately staffed to support the proposed project within the existing facility. Thus, the proposed project would not require the services of additional sworn officers and would not be expected to result in the need to expand the West Division or the need for the construction of new facilities.

Schools

Implementation of the proposed project would not be expected to result in impacts to schools in the surrounding areas of the City of Long Beach. The proposed project consists of expanded facilities to serve the existing community and would not be expected to induce growth. Therefore, the proposed project would not be expected to affect the population of school-age children in the City. The proposed project would continue to serve as an extended health care facility for area residents. Thus the proposed project would not generate a demand for the expansion of existing schools or construction of new schools that would cause physical change in the environment.

Parks

Implementation of the proposed project would not be expected to result in significant impacts to existing neighborhood and regional parks or other recreational facilities. The proposed project is located within the existing Campus. Parks located within an approximate 1-mile radius of the proposed project include Martin Luther King Jr. Park, Los Cerritos Park, Reservoir Park, and Veterans Memorial Park. The proposed project consists of expanded facilities to serve the existing community and would not be expected to induce growth. Therefore, the proposed project would not be increasing the level of demand on existing park facilities in the City of Long Beach.

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[17] Keith Colin, *Personal Communication*, 25 October 2004. City of Long Beach, Police Department, West Division, 100 Long Beach Boulevard, Long Beach, CA 90802.

[18] Long Beach Memorial Medical Center. Revised August 2003. "Management Plan for Security." Contact: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90806.

[19] Long Beach Memorial Medical Center. Revised September 2003. "Emergency Management Policies and Procedures: Internal Disaster—Biological/Chemical Response (Bioterrorism Plan)." (Policy 1.4.33.036.) Contact: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90806.

[20] Lighting Plan to be received from the Long Beach Memorial Medical Center.

Other Public Facilities

The proposed project would not be expected to result in impacts to other public facilities. The proposed project is located in the Central Long Beach Redevelopment Area. This area is well served by public facilities, including post offices and public libraries. Although City of Long Beach residents and visitors who use elements of the proposed project may also use other public facilities, the proposed project does not include residential development that would be expected to result in a net increase in local population. Therefore, the need to construct new public facilities would not be anticipated in association with the proposed project.

3.10.5 Cumulative Impacts

The incremental impacts of the proposed project to public services, when considered with the related past, present, or reasonably foreseeable, probable future projects listed in Section 2.6, Related Project, of this EIR would not be expected to be significant. Of the 43 related projects (Section 2, Project Description, Table 2.6-1, *List of Related Projects*) identified as a result of scoping, public comments, and coordination with the City of Long Beach Department of Planning and Building, nine of the projects include residential development that could contribute up to 661 dwelling units, and four of the projects include medical office development that would expand the capacity for outpatient health care in the vicinity of the proposed project. The proposed project would accommodate the expanded need for health care services resulting from the nine residential projects in the community. Therefore, the proposed project would be directly responsive to the need for expanded capacity for health care services from the related projects on local and regional hospital facilities. The proposed project would not contribute to significant cumulative impacts to public services resulting from the provision of, or need for, new or physically altered health facilities that would require physical alteration of the environment. In addition, the proposed project would not require the provision of, or need for, new or physically altered fire protection, police protection, school, or other public facilities that would require physical alteration of the environment. Therefore, there would be no significant cumulative impacts to public services.

3.10.6 Mitigation Measures

Measure Public Services-1

Exposure of people or property to security-related issues from the operation of the Miller Children's Hospital pediatric inpatient tower Phases I and II, central plant building, pediatric outpatient building, and link building; the Todd Cancer Institute (TCI) Phases I and II; and all new parking facilities within the Long Beach Memorial Medical Center (LBMMC) campus shall be minimized through an amendment of the existing security plan prior to the operation of each proposed project element. The LBMMC shall submit to the City of Long Beach an amendment to the security plan that identifies the existing measures that shall be applied to each element of the proposed project at least 30 days prior to the anticipated need for an occupancy permit.

Measure Public Services-2

Exposure of property to vandalism and of people to safety hazards from the operation of the Miller Children's Hospital pediatric inpatient tower Phases I and II, central plant building, pediatric outpatient building, and link building; the Todd Cancer Institute (TCI) Phases I and II; and all new parking facilities within the Long Beach Memorial Medical Center (LBMMC) campus shall be minimized through an amendment to the existing lighting plan prior to the operation of each proposed project element. The LBMMC shall submit to the City of Long Beach an amendment to the lighting plan that documents the location of all exterior lighting on structures, within parking areas, and along pedestrian and vehicular routes of travel. The amended lighting plan shall be submitted to the City of Long Beach at least 30 days prior to the anticipated need for an occupancy permit.

3.10.7 Level of Significance after Mitigation

Implementation of mitigation measures Public Services-1 and Public Services-2 would reduce potential impacts related to public services to below the level of significance.

3.11 TRAFFIC AND TRANSPORTATION

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to traffic and transportation. Therefore, this issue is being carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to traffic and transportation and to identify potential alternatives.

The analysis of traffic and transportation includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Traffic and transportation at the proposed project site were evaluated in accordance with the City of Long Beach General Plan[2] and the County of Los Angeles Congestion Management Plan (CMP). The full technical impact report is available in the traffic impact analysis (Appendix J, *Traffic Analysis*).[3]

3.11.1 Regulatory Framework

State

California Water Code

The proposed project is subject to the State of California Water Code, Division 12, Part 5, Chapter 1, Article 4, Section 31060 titled "Construction of Rights of Way."[4] Any mitigation measure required to be implemented in a state right-of-way would require a State of California Department of Transportation (Caltrans) Encroachment Permit. Mitigation in excess of $300,000 would require a Caltrans Project Study Report. Caltrans recommended that large-sized trucks transporting construction materials and equipment be limited to off-peak commute periods and any heavy construction equipment that requires the use of oversized transport vehicles on state roadways or facilities would require a Caltrans transportation permit. The construction scenario defined for the proposed project would not require the transport of oversized vehicles on state facilities.

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[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. December 1991. *Transportation Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

[4] West's Annotated California Codes. 1984. *Water Code Sections 30000 to 38999. Official California Water Code Classification*. Vol. 69. St. Paul, MN: West Publishing Company.

Regional

Southern California Association of Governments Regional Transportation Plan

The proposed project lies within the jurisdiction of the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP). The RTP is a long-range plan that provides a blueprint for future transportation improvements and investments based on specific transportation goals, objectives, policies, and strategies. The RTP is based on federal transportation law requiring comprehensive, cooperative, and continuous transportation planning. SCAG meets these requirements by developing comprehensive transportation plans that include all surface transportation modes (multimodal planning) to ensure efficient movement of people and goods throughout the region. The RTP includes an assessment of overall growth and economic trends in the region and provides strategic direction for transportation capital investments. The RTP serves the following functions:

- Addresses how to improve mobility and solve congestion problems
- Evaluates federal, state, and local funding available for transportation improvements
- Estimates costs of projects and develops funding strategies to meet these costs
- Achieves air quality requirements

Local

Metropolitan Transportation Authority Congestion Management Plan

The Congestion Management Program (CMP) for the County of Los Angeles (County) is a state-mandated program that was enacted by state legislature with the passage of Proposition 111 in 1990.[5] The program is intended to address the impact of local growth on the regional transportation system. As required by the 2002 CMP for the County, a Traffic Impact Assessment (TIA)[6] has been prepared for the proposed project to determine the potential impacts to designated monitoring locations on the CMP highway system. The hallmark of the CMP program is that it is intended to address the impact of local growth on the regional transportation system.

City of Long Beach General Plan

Transportation Element

The Transportation element of the City of Long Beach (City) General Plan includes pertinent policies related to traffic and transportation and circulation, issues related to land use, and various traffic analyses of traffic conditions within the City.

[5] County of Los Angeles, Metropolitan Transportation Authority. June 2002. *2002 Congestion Management Program for Los Angeles County*. Contact: Metropolitan Transportation Authority, One Gateway Plaza, Los Angeles, CA 90012-2952.

[6] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

3.11.2 Existing Conditions

Regional Roadway System

The proposed project is located in the City of Long Beach, County of Los Angeles, California (Figure 2.1-1, *Regional Vicinity*). The Long Beach Memorial Medical Center campus (Campus) is located less than 1 mile south of U.S. Interstate 405 (San Diego Freeway), approximately 1 mile east of U.S. Interstate 710 (Long Beach Freeway), and approximately 1 mile north of State Route 1 (Pacific Coast Highway). The Campus is located approximately 3.5 miles northeast of the Port of Long Beach, approximately 1 mile east of the Los Angeles River, and approximately 1 mile west of the Long Beach Airport.

U.S. Interstate 405 (I-405) primarily provides regional access to the proposed project site. The I-405 generally runs in a northwest to southeast direction in the vicinity of the proposed project site. This eight-lane facility is a major highway, which extends through the County of Los Angeles and links Long Beach with the neighboring communities of Westminster, Seal Beach, Lakewood, and Carson, as well as more distant locations such as the near-coastal areas of both Los Angeles and Orange County, as well as San Diego. High-occupancy vehicle (HOV) lanes exist on the I-405 throughout Los Angeles and Orange County. In the proposed project vicinity, there is one HOV lane in each direction; there are a total of 10 travel lanes on the I-405. Freeway access to the proposed project site is provided via the Long Beach Boulevard/I-405 interchange, Atlantic Avenue/I-405 interchange, Orange Avenue/I-405 southbound (SB) ramps interchange, and the 32nd Street/I-405 northbound (NB) ramps interchange.

Street Network

The Campus is bound on the north by East Spring Street, on the east by Atlantic Avenue, on the south by Willow Street, and on the west by Long Beach Boulevard (Figure 2.1-2, *Long Beach Memorial Medical Center Location*). Access to the site is provided via East Spring Street from the north, Atlantic Avenue from the east, Willow Street and 27th Street to the south, and Long Beach Boulevard to the west.

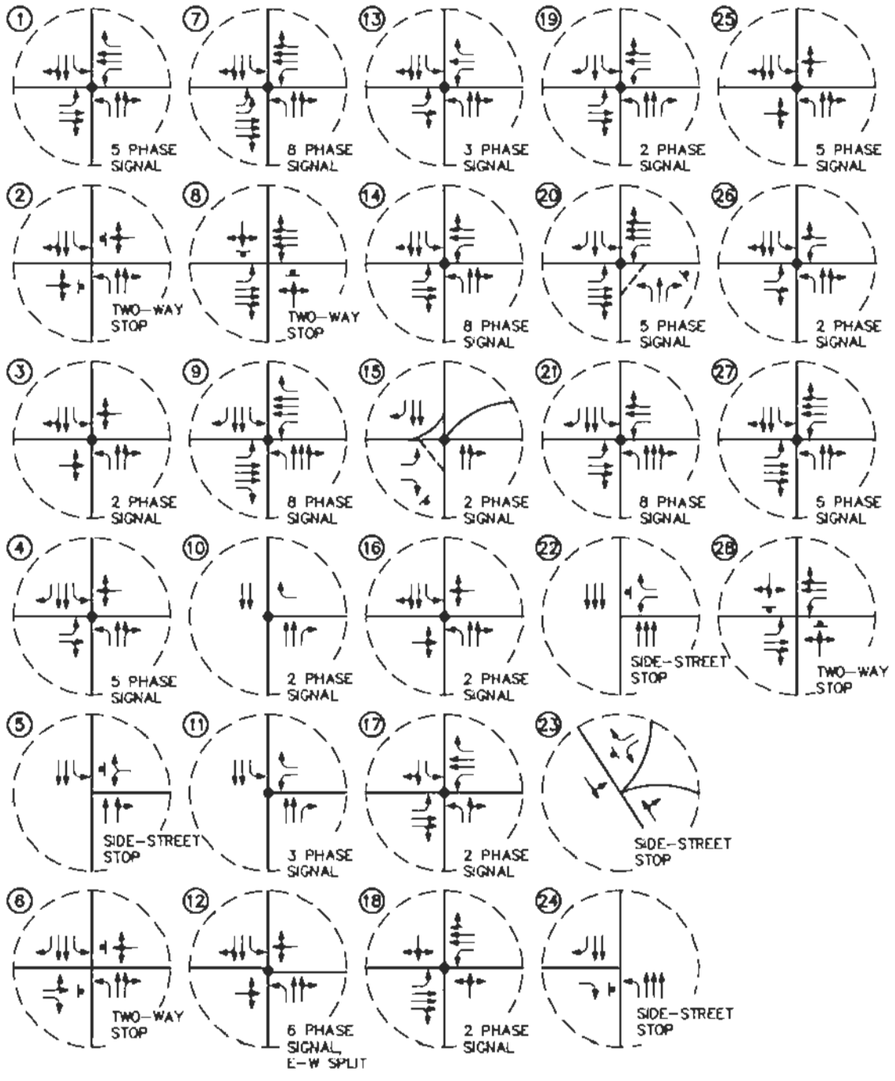
The principal local network of streets serving the proposed project includes Atlantic Avenue, Long Beach Boulevard, Wardlow Road, Spring Street, and Willow Avenue. The existing lane configurations were documented as part of the traffic impact analysis (Appendix J). Coordination was undertaken with the City of Long Beach staff to define study intersections impacted by the proposed project (Figure 3.11.2-1, *Existing Roadway Conditions and Intersection Controls*).[7]

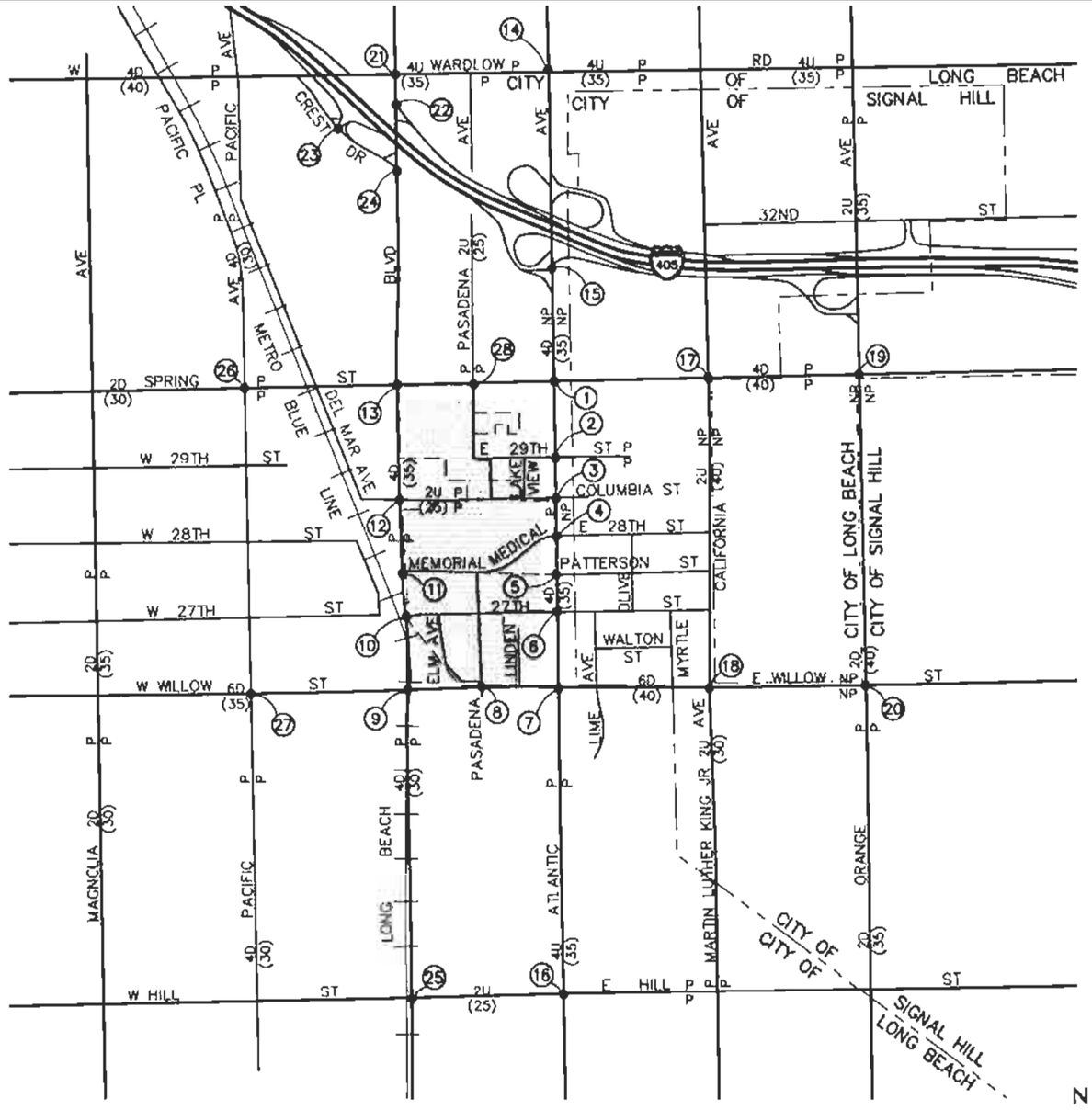
Each of the local network streets serving the proposed project are listed and analyzed below:

Atlantic Avenue

Atlantic Avenue is a four-lane, divided roadway oriented in the north-south direction, with a raised center median along the project frontage, providing two lanes of travel in each direction. Parking is not permitted along the east side of this roadway, but it is permitted on the west side of this roadway along the project frontage. North of Spring Street, curbside parking is prohibited on both sides of Atlantic Avenue. On-street parking is permitted along either side of this roadway south of

[7] Richard Barretto, Linscott, Law & Greenspan Engineers, *Personal Communication*, September 2004. Dave Roseman, Traffic Engineer, City of Long Beach.





LEGEND

- ← = APPROACH LANE ASSIGNMENT
- ● = TRAFFIC SIGNAL
- P = PARKING, NP = NO PARKING
- U = UNDIVIDED, D = DIVIDED
- - - = FUTURE ROADWAY ALIGNMENT OF MEMORIAL MEDICAL CAMPUS DRIVE
- 2 = NUMBER OF TRAVEL LANES
- (XX) = POSTED SPEED LIMIT (MPH)
- □ = PROJECT SITE
- (#) = STUDY INTERSECTION

SOURCE: Linscott Law & Greenspan

FIGURE 3.11.2-1
Existing Roadway Conditions and Intersection Controls

Willow Street. The posted speed limit on Atlantic Avenue is 35 miles per hour (mph). Traffic signals control the study intersections on Atlantic Avenue at Wardlow Road, I-405 SB ramps, Spring Street, Columbia Street, 28th Street (Memorial Medical Center), Willow Street, and Hill Street.

Long Beach Boulevard

Long Beach Boulevard is a four-lane, divided roadway oriented in the north-south direction, which borders the proposed project site to the west. Parking is permitted on either side of this roadway, within the vicinity of the proposed project. The posted speed limit on Long Beach Boulevard is 35 mph north of Columbia Street and 30 mph south of Willow Street. Traffic signals control the study intersections on Long Beach Boulevard at Wardlow Road, Spring Street, Columbia Street, Patterson Street (Memorial Drive), 27th Street, Willow Street, and Hill Street.

Wardlow Road

Wardlow Road is a four-lane, divided roadway oriented in the east-west direction. In general, on-street parking is permitted along this roadway in the vicinity of the proposed project. The posted speed limit on Wardlow Road is 40 mph west of Long Beach Boulevard and 35 mph east of Long Beach Boulevard. Traffic signals control the study intersections on Wardlow Road at Long Beach Boulevard and Atlantic Avenue.

Spring Street

Spring Street is a four-lane, divided roadway oriented in the east-west direction, which borders the proposed project site to the north. Spring Street is a two-lane, divided roadway west of Del Mar Avenue. Parking is not permitted on either side of this roadway, within the vicinity of the proposed project. The posted speed limit on Spring Street is 30 mph west of Long Beach Boulevard and 40 mph east of Long Beach Boulevard. Traffic signals control the study intersections on Spring Street at Pacific Avenue, Long Beach Boulevard, Atlantic Avenue, California Avenue, and Orange Avenue.

Willow Street

Willow Street is a six-lane, divided roadway oriented in the east-west direction, with a raised median, providing three travel lanes in each direction. In general, parking is permitted along either side of this roadway, within the vicinity of the proposed project. The posted speed limit on Willow Street is 35 mph west of Atlantic Avenue and 40 mph east of Atlantic Avenue.

Traffic Volumes

Twenty-eight (28) key intersections were identified and selected for evaluation as the locations at which to assess existing and future traffic operating conditions. Some portion of potential project-related traffic would pass through each of these intersections, and their analysis would reveal the expected relative impacts of the proposed project. The 28 key intersections were selected for evaluation based on discussions with the City and in consideration of the criteria in the current County CMP traffic impact guidelines. The 28 key intersections are listed below:

1) Atlantic Avenue/Spring Street
2) Atlantic Avenue/East 29th Street
3) Atlantic Avenue/Columbia Street

4) Atlantic Avenue/Memorial Medical Center–28th Street
5) Atlantic Avenue/East Patterson Street
6) Atlantic Avenue/27th Street
7) Atlantic Avenue/Willow Street
8) Pasadena Avenue/Willow Street
9) Long Beach Boulevard/Willow Street
10) Long Beach Boulevard/27th Street
11) Long Beach Boulevard/East Patterson Street
12) Long Beach Boulevard/Columbia Street
13) Long Beach Boulevard/Spring Street
14) Atlantic Avenue/Wardlow Road
15) Atlantic Avenue/I-405 Southbound (SB) Ramps
16) Atlantic Avenue/Hill Street
17) California Avenue/Spring Street
18) California Avenue/Willow Street
19) Orange Avenue/Spring Street
20) Orange Avenue/Willow Street
21) Long Beach Boulevard/Wardlow Road
22) Long Beach Boulevard/I-405 Northbound (NB) Ramps
23) I-405 SB Ramps/Crest Drive
24) Long Beach Boulevard/Crest Drive
25) Long Beach Boulevard/Hill Street
26) Pacific Avenue/Spring Street
27) Pacific Avenue/Willow Street
28) Pasadena Avenue/Spring Street

The existing a.m. and p.m. peak-hour traffic counts were conducted in October 2004 (Appendix J).[8] The existing a.m. and p.m. peak-hour traffic volumes at key study intersections (Figure 3.11.2-2a, *Existing A.M. Peak-Hour Traffic Volumes*, and Figure 3.11.2-2b, *Existing P.M. Peak-Hour Traffic Volumes*).

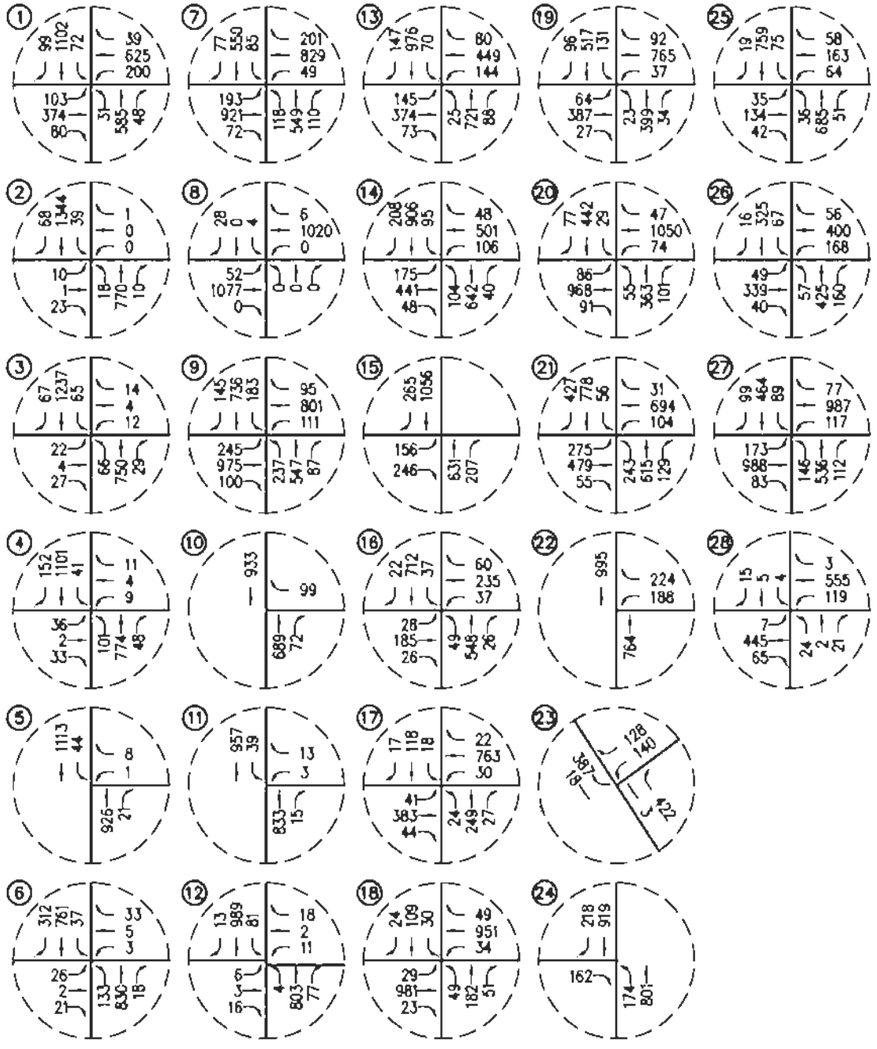
Public Transit

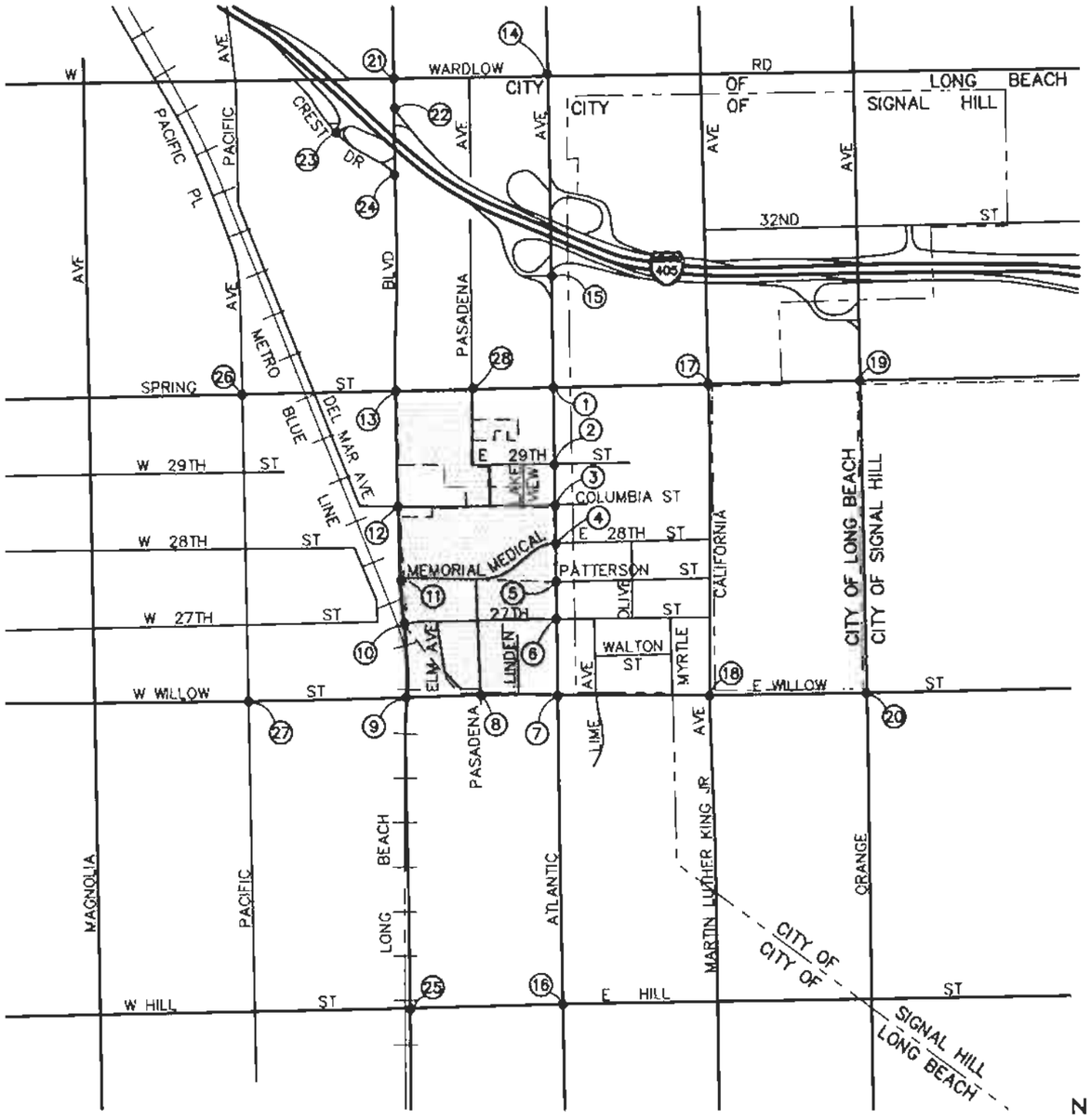
Long Beach Transit (LBT), the Los Angeles Metropolitan Transit Authority (MTA), and the Metro Blue Line Light Rail Transit System provide public transit services in the vicinity of the proposed project.

Long Beach Transit

LBT Route No. 5 travels north and south on Long Beach Boulevard adjacent to the proposed project site, with a bus stop at the intersection of Long Beach Boulevard and Willow Street and Long Beach and Memorial Medical Center/28th Street. LBT Route Nos. 45, 46, 61, 66, 81, 101, 102, 103, 131, 171, 172, 173, 174, 191, and 192 all provide direct access to LBT Route No. 5.

[8] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.



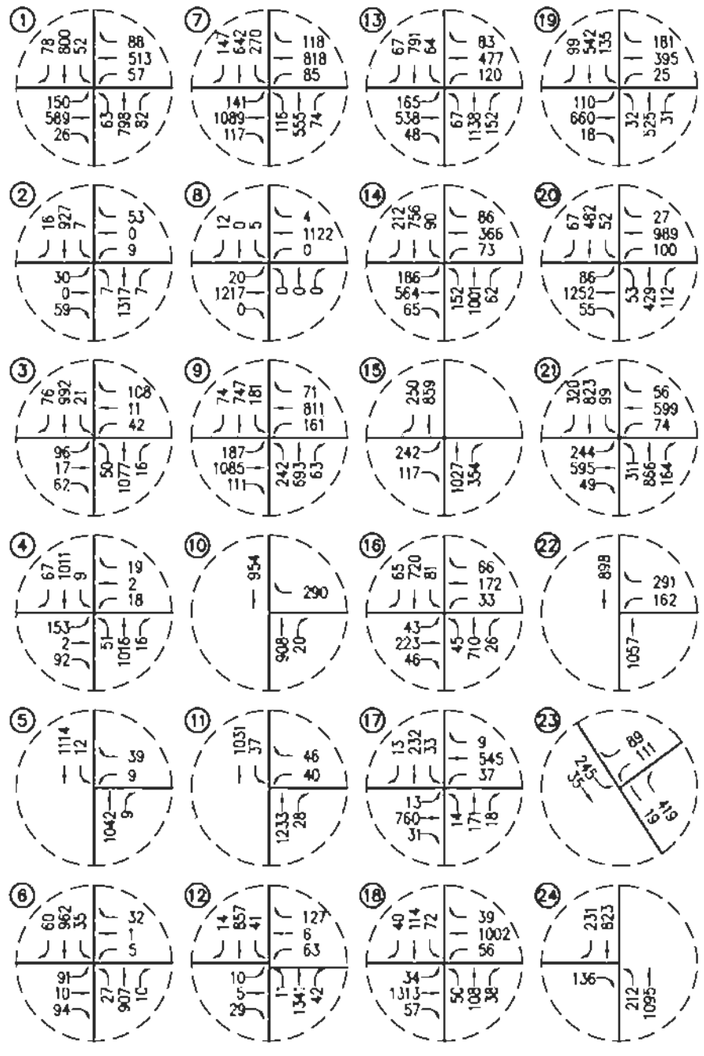


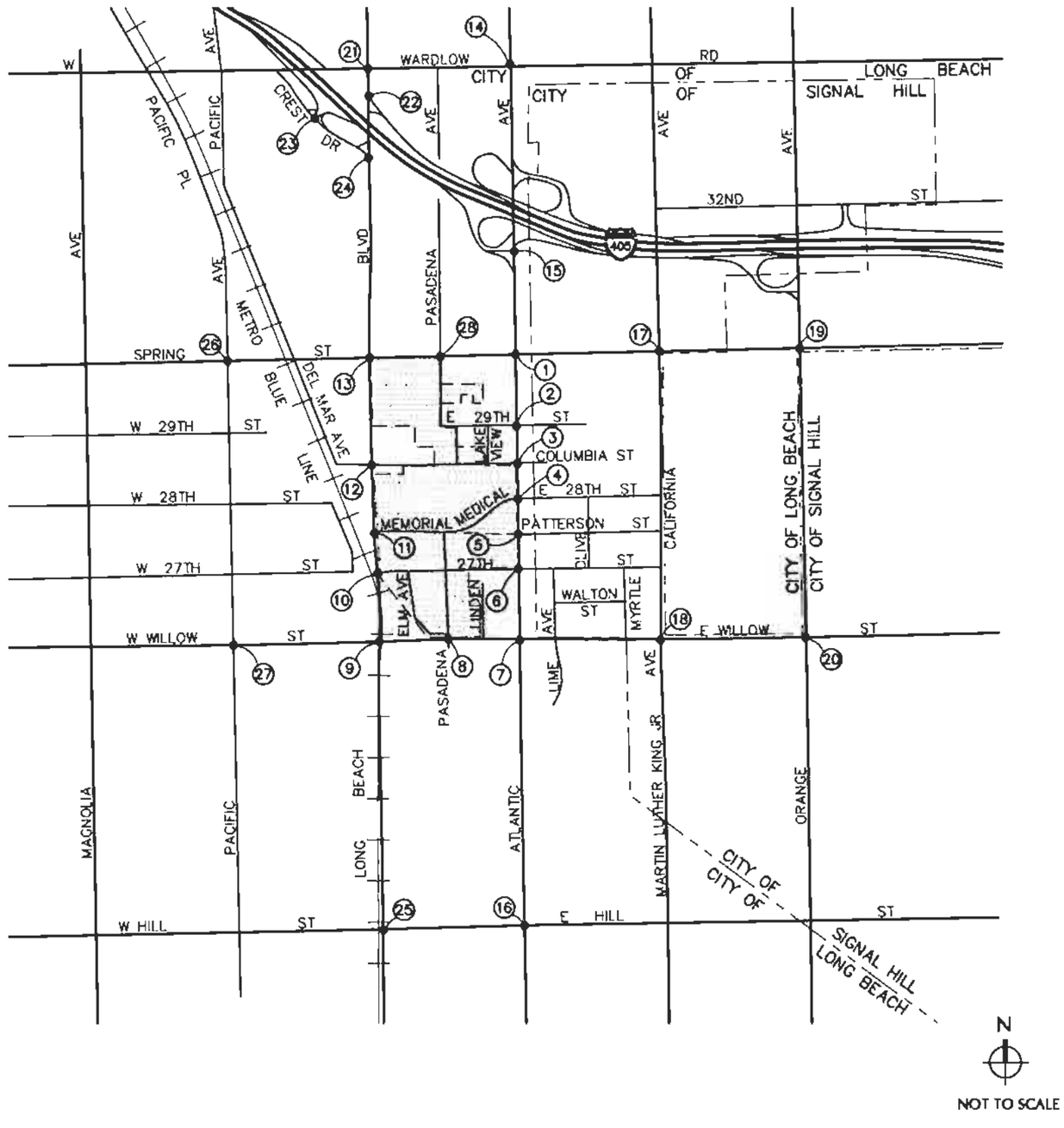
LEGEND

- = PROJECT SITE
- = FUTURE ROADWAY ALIGNMENT OF MEMORIAL MEDICAL CAMPUS DRIVE
- = STUDY INTERSECTION

SOURCE: Linscott Law & Greenspan

FIGURE 3.11.2-2a
Existing A.M. Peak-Hour Traffic Volumes





LEGEND

- = PROJECT SITE
- FUTURE ROADWAY ALIGNMENT OF MEMORIAL MEDICAL CAMPUS DRIVE
- (#) = STUDY INTERSECTION

SOURCE: Linscott Law & Greenspan

FIGURE 3.11.2-2b
Existing P.M. Peak-Hour Traffic Volumes

LBT Route Nos. 61 and 62 travel north and south on Atlantic Avenue east of the proposed project site, with a bus stop at the intersection of Atlantic Avenue and Willow Street. LBT Route Nos. 5, 7, 45, 46, 81, 101, 102, 103, 131, 171, 172, 173, 174, 191, and 192 all provide direct access to LBT Route Nos. 61 and 62.

Metropolitan Transportation Authority

MTA Route Red No. 60, Route Orange No. 232, and Route Green No. 360 travel north and south on Long Beach Boulevard near the proposed project site. Red Route No. 60 travels from Long Beach Boulevard to Pacific Boulevard to Santa Fe Avenue to Downtown Los Angeles. Orange Route No. 232 travels from Long Beach Boulevard to Anaheim Street to Pacific Coast Highway to Sepulveda Boulevard to the Los Angeles International Airport (LAX) City Bus Center.

The LBT service area extends beyond the City in portions of Signal Hill, Cerritos, Lakewood, San Pedro, Paramount, Compton, Los Angeles, Hawaiian Gardens, and Seal Beach. All LBT routes connect with the Metro Blue Line Light Rail Rapid Transit System. Bus transfers provide for discounted fares on the Blue Line.

Metro Blue Line Light Rail Transit System

Given that bus service via LBT is provided between Willow Station and the proposed project site, patrons would be able to utilize the existing Metro Blue Line Light Rail Transit System via Willow Station. In addition, Willow Station is located immediately south of the proposed project site by less than 0.25 mile, allowing patrons to walk to the Campus.

Intersection Conditions

Level of service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. The City of Long Beach and the City of Signal Hill consider LOS D to be the minimum acceptable condition that should be maintained during the peak commute hours for roads and highways in the vicinity of the proposed project site.

Existing a.m. and p.m. peak-hour operating conditions for the 28 key study intersections were evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the methodology outlined in the Highway Capacity Manual 2000[9] for unsignalized intersections (Table 3.11.2-1, *Level of Service Criteria for Unsignalized Intersections,* and Table 3.11.2-2, *Existing Peak Hours of Service*).

[9] Highway Research Board. 1965. *Highway Capacity Manual* (Special Report No. 87). Washington, DC: Highway Research Board.

TABLE 3.11.2-1
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LOS	Highway Capacity Manual Delay Value (sec/veh)	LOS Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

SOURCE:
Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105; and City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626.

TABLE 3.11.2-2
EXISTING PEAK HOURS OF SERVICE

Key Intersections		Time Period	Control Type	ICU/HCM Delay Value (sec/veh)	LOS
1.	Atlantic Avenue/ Spring Street	a.m. p.m.	5∅ Traffic Signal	0.781 0.687	C B
2.	Atlantic Avenue/ East 29th Street	a.m. p.m.	Two-Way Stop	1.40 5.40	A A
3.	Atlantic Avenue/ Columbia Street	a.m. p.m.	2∅ Traffic Signal	0.582 0.574	A A
4.	Atlantic Avenue/Memorial Medical Center–East 28th Street	a.m. p.m.	5∅ Traffic Signal	0.565 0.588	A A
5.	Atlantic Avenue/ East Patterson Street	a.m. p.m.	Side Street Stop	0.30 0.60	A A
6.	Atlantic Avenue/ 27th Street	a.m. p.m.	Two-Way Stop	4.50 29.30	A D
7.	Atlantic Avenue/ Willow Street	a.m. p.m.	8∅ Traffic Signal	0.732 0.850	C D
8.	Pasadena Avenue/ Willow Street	a.m. p.m.	Two-Way Stop	0.60 0.40	A A
9.	Long Beach Boulevard/ Willow Street	a.m. p.m.	8∅ Traffic Signal	0.878 0.891	D D
10.	Long Beach Boulevard/ 27th Street	a.m. p.m.	2∅ Traffic Signal	0.454 0.579	A A
11.	Long Beach Boulevard/ East Patterson Street	a.m. p.m.	3∅ Traffic Signal	0.421 0.553	A A
12.	Long Beach Boulevard/ Columbia Street	a.m. p.m.	6∅ Traffic Signal	0.541 0.789	A C
13.	Long Beach Boulevard/ Spring Street	a.m. p.m.	3∅ Traffic Signal	0.859 **1.004**	D **F**
14.	Atlantic Avenue/ Wardlow Road	a.m. p.m.	8∅ Traffic Signal	0.834 0.795	D C
15.	Atlantic Avenue/ I-405 SB Ramps	a.m. p.m.	2∅ Traffic Signal	0.584 0.683	A B
16.	Atlantic Avenue/ Hill Street	a.m. p.m.	2∅ Traffic Signal	0.568 0.576	A A
17.	California Avenue/ Spring Street	a.m. p.m.	2∅ Traffic Signal	0.548 0.532	A A
18.	California Avenue/ Willow Street	a.m. p.m.	2∅ Traffic Signal	0.506 0.561	A A
19.	Orange Avenue/ Spring Street	a.m. p.m.	2∅ Traffic Signal	0.745 0.708	C C
20.	Orange Avenue/ Willow Street	a.m. p.m.	5∅ Traffic Signal	0.743 0.819	C D
21.	Long Beach Boulevard/ Wardlow Road	a.m. p.m.	8∅ Traffic Signal	**0.934** **0.949**	**E** **E**

TABLE 3.11.2-2
EXISTING PEAK HOURS OF SERVICE, Continued

Key Intersections		Time Period	Control Type	ICU/HCM Delay Value (sec/veh)	LOS
22.	Long Beach Boulevard/ I-405 NB Ramp	a.m. p.m.	Side Street Stop	30.10 **40.00**	D **E**
23.	I-405 SB Ramps/ Crest Drive	a.m. p.m.	Side Street Stop	19.20 6.90	C A
24.	Long Beach Boulevard/ Crest Drive	a.m. p.m.	Side Street Stop	2.10 1.90	A A
25.	Long Beach Boulevard/ Hill Street	a.m. p.m.	5∅ Traffic Signal	0.605 0.676	B B
26.	Pacific Avenue/ Spring Street	a.m. p.m.	2∅ Traffic Signal	0.667 0.723	B C
27.	Pacific Avenue/ Willow Street	a.m. p.m.	5∅ Traffic Signal	0.717 0.764	C C
28.	Pasadena Avenue/ Spring Street	a.m. p.m.	Two-Way Stop	2.20 16.20	A C

NOTES:
Bold ICU/LOS values indicate adverse service levels based on City LOS standards.
sec/veh = seconds per vehicle (delay).
SOURCE:
Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105; and City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626.

Table 3.11.2-2 summarizes the existing peak-hour LOS calculations for the 28 study intersections based on existing year 2004 traffic volumes and current street geometry. Review of Table 3.11.2-2 indicates that, based on the ICU/HCM method of analysis and the City's LOS criteria, 3 of the 28 key study intersections currently operate at an unacceptable LOS (LOS E or worse) during the a.m. and/or p.m. peak hours. The intersections that currently operate at LOS E and/or LOS F during the a.m. peak hour and/or p.m. peak hour include Long Beach Boulevard/Spring Street, Long Beach Boulevard/Wardlow Road, and Long Beach Boulevard/I-405 NB ramps. The remaining 25 key study intersections currently operate at LOS D or better during the commuter peak hours.

Existing Development

The existing uses at the Campus include inpatient medical facilities, outpatient medical facilities, and mixed-use facilities, including a child care center, nutrition programs, and outpatient clinics. There are approximately 1,213,945 gross square feet of structures located within the Campus. Table 3.11.2-3, *Existing Development Tabulation,* summarizes the existing development tabulation at the Campus. There are two licensed hospitals within the Campus with a total floor area of 872,792 square feet: the Long Beach Memorial Medical Center (LBMMC) with 459 licensed beds and Miller Children's Hospital (MCH) with 281 licensed beds. These facilities are centrally located on the Campus, north of 27th Street, east of Long Beach Boulevard, south of Columbia Street, and west of Atlantic Avenue. In addition to inpatient services, outpatient services are provided in structures located north and south of LBMMC and MCH.

TABLE 3.11.2-3
EXISTING DEVELOPMENT TABULATION

Building Number per Existing Building Plan[1]	Building	Gross Floor Areas (Square Foot)
1	Miller Children's Hospital	175,162
2	Long Beach Memorial Medical Center	697,630
3	Administration Building	129,531
4	Memorial West Facility (Rehab)[2]	107,622
5	Miller House	25,000
6	Ranch House / WIC Medical Center	12,000
8	Memorial Guest Residence Hotel	12,000
9	Research Building	20,000
17	Buffums Plaza	35,000
	Total	**1,213,945**

NOTES:
[1] Building numbers as shown on diagram. Taylor, July 2004. "Existing Buildings." Contact: Taylor, 2220 University Drive, Newport Beach, CA 92660.
[2] Gross floor area of the Memorial West Facility includes the Rehab (31,167 square feet).

Based on a comprehensive inventory of on-site spaces, the traffic impact analysis (Appendix J)[10] determined that there are 3,452 parking spaces located in 11 locations throughout the Campus. Figure 2.2-3, *Existing Parking,* identifies the parking locations of the Campus, whereas Table 3.11.2-4, *Existing Parking Supply,* presents the existing parking supply within each parking location and parking type/designation (i.e., patient/visitor, staff/employee, doctor/physician, reserved, etc.).

[10] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

TABLE 3.11.2-4
EXISTING PARKING SUPPLY

Parking Lot	Staff/Employee Spaces	Patient/Visitor Spaces	Doctor Spaces	Total Spaces
Lot A	675	—	—	675
Lot B	—	217	—	217
Lot C	—	74	—	74
Lot D	—	—	28*	28
Lot E	85	—	—	85
Lot F	—	26	60	86
Lot G	—	—	87	87
Lot H	—	29	—	29
Lot I	150	—	—	150
Lot J	1,430	164	—	1,594
Lot K	—	427	—	427
Total	2,340	937	175	3,452

NOTE:
*Spaces shared with patients and visitors.
SOURCE:
Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105; and City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626.

3.11.3 Significance Thresholds

The potential for the proposed project to result in impacts related to traffic and transportation was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines, as modified by the County CMP and City of Long Beach General Plan. Thresholds of significance for traffic levels are separated into areas deemed deficient and those identified as significant. The term *deficiency* refers to the operational level below which traffic movement is no longer considered acceptable. Although the County CMP states that LOS E or better is acceptable, the City of Long Beach General Plan states that LOS D is the lowest acceptable LOS at intersections. Thus, any intersections operating at LOS E or F are considered deficient.

The proposed project would normally be considered to have a significant impact to traffic and transportation when the potential for any one of the following seven thresholds occurs:

- Increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity (V/C) ratio on roads, or congestion at intersections)

- Exceedance, either individually or cumulatively, of a LOS standard established by the County CMP and City of Long Beach General Plan for designated roads or highways. Impacts to local and regional transportation systems are considered significant if one of two conditions occur:

    - An unacceptable peak-hour LOS (i.e., LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU =

0.801 to 0.900) to be the minimum acceptable LOS for all other intersections. For the City, the current LOS, if worse than LOS D, should also be maintained.

- The project increases traffic demand at the study intersection by 2 percent of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a significant adverse traffic impact is defined as a project that adds 2 percent of more traffic to delay (seconds per vehicle) at an intersection operating at LOS E or F.

- Change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

- Substantial increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

- Inadequate emergency access

- Inadequate parking capacity

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)

3.11.4 Impact Analysis

This section analyzes the potential for significant impacts on traffic and transportation that would occur from the implementation of the proposed project. A project's traffic and transportation impacts can be separated into operational and future impacts, usually long-term impacts and construction impacts, which are short-term impacts.

The relative impact of the added project traffic volumes generated by the proposed project during the a.m. and p.m. peak hours was evaluated based on analysis of future operating conditions at the 28 key study intersections, both with and without the proposed project. The significance of the potential impacts of the proposed project at each key intersection was then evaluated using the City's LOS standards and traffic impact criteria.

Implementation of the proposed project would be expected to have a potentially significant effect on the V/C ratio of existing streets and intersections in the vicinity of the proposed project. The LOS for several of the surrounding streets and freeways would degrade to below an acceptable level with the implementation of the proposed project. In addition, the implementation of the proposed project may have a significant impact on LOS standards established by the County for the CMP roadway system.

Direct and Indirect Impacts

Project Traffic Generation

The proposed project would lead to a physical change in the environment, the development of currently undeveloped land; therefore, it would result in impacts to the LOS of the surrounding

local roadways and the CMP roadway system. Where a CMP deficiency has been projected, necessary mitigation measures have been identified to restore traffic operation, the proposed project's share of new traffic on the impacted CMP facility has been calculated, and the cost of improvements necessary to restore traffic operations to an acceptable LOS has been estimated.

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation factors and equations used in the traffic forecasting procedure are typically found in Trip Generation.[11]

Table 3.11.4-1**,** *Project Traffic Generation Rates*, summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed project.

TABLE 3.11.4-1
PROJECT TRAFFIC GENERATION RATES

ITE Land Use Code / Project Description	Daily 2-Way	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors							
610: Hospital (TE/bed)	11.81	0.79	0.34	1.13	0.47	0.83	1.30
720: Medical-Dental Office Building (TE/1,000 square feet)	36.13	1.96	0.52	2.48	1.00	2.72	3.72

NOTES:
TE/bed = Trip ends per bed
TE/1,000 square feet = Trip ends per 1,000 square feet of development.
SOURCE:
Institute of Transportation Engineers. 2003. *Trip Generation.* Seventh Edition. Washington, DC: Institute of Transportation Engineers.

Table 3.11.4-2, *Project Traffic Generation Forecast,* summarizes the trip generation forecast for the proposed project. Table 3.11.4-2 indicates that the proposed expansion project, at build-out, is expected to generate approximately 9,377 daily trips, with 696 trips (534 inbound, 162 outbound) produced in the a.m. peak hour and 979 trips (283 inbound, 696 outbound) produced in the p.m. peak hour on a typical weekday.

[11] Institute of Transportation Engineers. 2003. *Trip Generation.* Seventh Edition. Washington, DC: Institute of Transportation Engineers.

TABLE 3.11.4-2
PROJECT TRAFFIC GENERATION FORECAST

Project Description	Daily 2-Way	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Year 2008							
TCI Phase I (83,630 square feet)	3,022	164	43	207	84	227	311
MCH pediatric inpatient tower Phase I (72 beds)	850	57	24	81	34	60	94
MCH pediatric outpatient tower (80,000 square feet)	2,890	157	42	199	80	218	298
Year 2008 Subtotal:	**6,762**	**378**	**109**	**487**	**198**	**505**	**703**
Year 2014							
TCI Phase II (42,300 square feet)	1,528	83	22	105	42	115	157
MCH pediatric inpatient tower Phase II (92 beds)	1,087	73	31	104	43	76	119
Year 2014 Subtotal:	**2,615**	**156**	**53**	**209**	**85**	**191**	**276**
Project Total:	**9,377**	**534**	**162**	**696**	**283**	**696**	**979**

SOURCE:
Institute of Transportation Engineers. 2003. *Trip Generation*. Seventh Edition. Washington, DC: Institute of Transportation Engineers.

Phase I of the proposed project is forecast to generate 6,762 daily trips, with 487 trips produced in the a.m. peak hour and 703 trips produced in the p.m. peak hour on a typical weekday. Phase II of the proposed project is forecast to generate 2,615 daily trips, with 209 trips produced in the a.m. peak hour and 276 trips produced in the p.m. peak hour on a typical weekday.

Air Traffic Impact

Implementation of the proposed project would not be expected to result in significant impacts to air traffic patterns. The proposed project is located approximately 1 mile west of the Long Beach Airport. The proposed project would be developed completely within the existing footprint of the Campus. There would be no change in land use patterns in relation to existing air traffic patterns; similarly, there would be no anticipated impacts related to safety in relation to land uses for the proposed project area.

Hazards Due to Design Feature Impacts

Implementation of the proposed project would not be expected to result in design modifications to roadway features. However, there would be no expected increase in hazards (e.g., sharp curves or dangerous intersections). The proposed project would likely require minor modifications to the adjacent external street system and the improvements to the internal circulation system. The result of any modifications would be designed to improve overall traffic flow and circulation patterns in the immediate vicinity of the proposed project site, as well as improve site access and internal circulation.

Emergency Vehicle Access Impact

Implementation of the proposed project would have the potential to result in significant impacts to emergency access, thus requiring the consideration of mitigation measures. Construction trips would be expected to use emergency access routes to the Campus during the anticipated 10-year

build-out of the proposed project, thus requiring the development of a Traffic Safety Plan for each phase of construction to ensure the provision of adequate emergency access throughout construction of the proposed project. Similarly, operation of the proposed project improvements would be expected to increase the trips generated by the Campus by as much as 50 percent at build-out, thus requiring the consideration of mitigation measures that ensure emergency access is not compromised. The mitigation measures will address the development of a Traffic Safety Plan for each phase of construction to ensure that emergency vehicle routes operate properly.

Parking Impact

Implementation of the proposed project would be expected to result in significant impacts on parking capacity, thus requiring the consideration of mitigation measures. The proposed project would result in the displacement of existing parking during each phase of construction. There are five elements of the proposed project that require the removal of parking or that generate demand for new parking: (1) TCI Phases I and II; (2) MCH pediatric inpatient tower Phases I and II, utility trench, and central plant building; (3) MCH pediatric outpatient building; (4) MCH link building; and (5) roadway realignment. The initial phase of construction would utilize the 259 available parking spaces. When available parking is exhausted in the later phase of construction, additional parking spaces would be required. A minimum of 860 additional parking spaces would be required to be in place to facilitate the initiation of the first three proposed project elements: (1) TCI Phase I; (2) MCH pediatric inpatient tower Phase I, utility trench, and central plant building; and (3) roadway realignment.

To determine the number of parking spaces required to support the proposed project, parking demand was calculated using parking codes per the City of Long Beach Title 21, Zoning Regulations, Chapter 21.41: "Off-Street Parking and Loading Requirements."[12]

The City zoning code specifies a parking ratio of two spaces per bed for hospitals and five spaces per 1,000 gross floor area (GFA) of medical office uses. The City parking codes were applied to the existing and proposed development tabulation of the LBMMC. Table 3.11.4-3, *City Code Parking Requirements,* summarizes the square-footage information and the parking requirements for the existing land uses and proposed project. As shown, direct application of the City's code to the existing development results in a code requirement of 3,193 parking spaces, whereas the proposed project has a code requirement of 1,418 parking spaces, for a combined code requirement of 4,611 parking spaces.

[12] City of Long Beach, Department of Planning and Building. 1988. Title 21, Zoning Regulations, Chapter 21.41: "Off-Street Parking and Loading Requirements." Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

TABLE 3.11.4-3
CITY CODE PARKING REQUIREMENTS

Project Description	Size (Square footage or number of beds)		City of Long Beach Code Parking Ratio	Spaces Required
Existing Development				
LBMMC	462	Beds	2 spaces per bed	924
Miller Children's Hospital	281	Beds	2 spaces per bed	562
LBMMC remaining medical facilities	341,153	SF	5 spaces per 1,000 SF	1,707
Subtotal – Existing Development Code Parking Requirement:				**3,193**
Existing Parking Supply:				**3,452**
Parking Surplus/Deficiency (+/–):				**+259**
Proposed Development				
Todd Cancer Institute	125,930	SF	5 spaces per 1,000 SF	630
Miller Children's Hospital pediatric inpatient tower	164	Beds	2 spaces per bed	328
Miller Children's Hospital pediatric outpatient building	80,000	SF	5 spaces per 1,000 SF	400
Millers Children's Hospital link building	20,000	SF	—	50
Millers Children's Hospital central plant building	3,500	SF	—	10
Subtotal – Proposed Development Code Parking Requirement:				**1,418**
Total Code Parking Requirement (Existing + Proposed):				**4,611**
Existing Parking Supply:				**3,452**
Net Parking Surplus/Deficiency (+/–) per Code:				**–1,159**

NOTE:
SF = Square footage
SOURCE:
City of Long Beach, Department of Planning and Building. 1988. Title 21, Zoning Regulations, Chapter 21.41: "Off-Street Parking and Loading Requirements." Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

In addition, a total of 577 parking spaces would be permanently lost due to development of five project elements: (1) TCI Phase I; (2) MCH patient inpatient tower Phase I, utility trench, and central plant building; (3) roadway realignment; (4) MCH pediatric outpatient building; and (5) TCI Phase II (Table 3.11.4-4, *Existing Parking Spaces Converted to Development*). In addition, construction staging and soil remediation impacts on existing parking were also considered. Concurrent staging for TCI Phase I and the MCH pediatric inpatient tower, utility trench, and central plant building would be expected to result in temporary impacts to an additional 190 parking spaces (Table 3.11.4-5, *Additional Parking Spaces Required During Construction*).

TABLE 3.11.4-4
EXISTING PARKING SPACES CONVERTED TO DEVELOPMENT

Project Element	Construction Schedule	Parking Spaces Removed
Construction Parking Requirements July 2005 to December 2007		
Todd Cancer Institute Phase I	Jul 2005 to Dec 2007	171
Miller Children's Hospital pediatric inpatient tower Phase I, utility trench, and central plant building	Jul 2005 to Dec 2007	100
Roadway realignment	Jul 2005 to Jun 2006	195
Total Parking Converted During Construction July 2005 to December 2007		466
Construction Parking Requirements January 2006 to June 2007		
Miller Children's Hospital pediatric outpatient building	Jan 2006 to Jun 2007	43
Total Parking Converted During Construction January 2006 to June 2007		43
Construction Parking Requirements January 2010 to June 2011		
Todd Cancer Institute Phase II	Jul 2010 to Jun 2011	68
Miller Children's Hospital link building	Jul 2010 to Jun 2011	–
Total Parking Converted During Construction July 2010 to June 2011		68
Construction Parking Requirements January 2012 to June 2013		
Miller Children's Hospital pediatric inpatient tower Phase II	Jan 2012 to Jun 2013	–
Total Parking Converted During Construction July 2010 to June 2011		–
Net Reduction of Existing Parking Spaces		577

TABLE 3.11.4-5
ADDITIONAL PARKING SPACES REQUIRED DURING CONSTRUCTION

Project Element	Construction Schedule	Temporary Construction Impacts to Parking Spaces
Construction Parking Requirements July 2005 to December 2007		
Todd Cancer Institute Phase I	Jul 2005 to Dec 2007	135
Miller Children's Hospital pediatric inpatient tower Phase I, utility trench, and central plant building	Jul 2005 to Dec 2007	55
Roadway realignment	Jul 2005 to Jun 2006	—
Total Additional Parking Required During Construction July 2005 to December 2007		190
Construction Parking Requirements January 2006 to June 2007		
Miller Children's Hospital pediatric outpatient building	Jan 2006 to Jun 2007	—
Total Additional Parking Required During Construction January 2006 to June 2007		—
Construction Parking Requirements January 2010 to June 2011		
Todd Cancer Institute Phase II	Jul 2010 to Jun 2011	207
Miller Children's Hospital link building	Jul 2010 to Jun 2011	—
Total Additional Parking Required During Construction July 2010 to June 2011		207
Construction Parking Requirements January 2012 to June 2013		
Miller Children's Hospital pediatric inpatient tower Phase II	Jan 2012 to Jun 2013	20
Total Additional Parking Required During Construction July 2010 to June 2011		20
Maximum Temporary Construction Impacts to Parking		207

With a current parking supply of 3,452 parking spaces, the Campus would have a deficiency of 1,153 parking spaces when compared to the City parking code requirement. The proposed project includes a parking program that would meet all parking deficiencies.

In recognition of the demand for parking generated by the elements of the proposed project, LBMMC identified opportunities to accommodate additional parking within and immediately adjacent to the Campus (Table 3.11.4-6, *Parking Opportunities*).

TABLE 3.11.4-6
PARKING OPPORTUNITIES

Proposed Parking Site	Potential Surface Parking
Off-Site Lease Opportunities	
Site L	296
Site M	238
Capacity of Off-Site Lease Opportunities	534
On-Site Conversion to Surface Parking	
Site N	121
Site P	68
Site Q	71
Site R	96
Site S	72
Site T	87
Capacity of On-Site Conversion to Surface Parking	515
Total Available Parking Opportunities	1,049

Based on the existing available resources, LBMMC defined a parking program to accommodate the parking demand resulting from construction and operation of the elements of the proposed project (Table 3.11.4-7, *Construction Parking Program*, and Table 3.11.4-8, *Operation Parking Program*). The combined use of existing on-site parking, leasing immediately adjacent parking, and development of additional on-site parking would provide sufficient parking to support construction and operation of three elements of the proposed project: (1) TCI Phase I; (2) MCH pediatric inpatient tower Phase I, utility trench, and central plant building; and (3) roadway realignment. However, the identified parking opportunities would be insufficient by approximately 681 parking spaces to support operation of the last four elements of the proposed project: (1) MCH pediatric outpatient building, (2) TCI Phase II, (3) MCH link building Phase II, and (4) MCH Phase II. If the lease of Lots L and M could not be renewed in year 2015, there would be a need to replace the 534 parking spaces provided at that location, thus suggesting a total possible shortfall of 1,215 parking spaces in year 2015. It would be feasible to address this shortfall through development of a parking structure at the location of the existing surface Lot K. Development of a structure on Lot K would displace 189 parking spaces during construction that would need to be incorporated into the design of the parking structure for a total capacity of 1,404. Thus, the inclusion of the parking program will provide a sufficient number of parking spaces that will be provided throughout the construction of the proposed project.

TABLE 3.11.4-7
CONSTRUCTION PARKING PROGRAM

	Period	Parking Required	Parking Program
STEP A	Roadway realignment: July 2005 to October 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: October 2005 to January 2008	155	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		91
	TCI Phase I: July 2005 to December 2006	306	
	Off-site Parking Lot L (296)		163
	Off-site Parking Lot M (238)		143
STEP B	MCH pediatric outpatient building: October 2005 to May 2007	43	
	On-site Parking Lot R (68)		43
STEP C	TCI Phase II: July 2010 to June 2011	275	
	Parking structure at Lot K (1,404)		275
	MCH link building: July 2010 June 2011	0	
STEP D	MCH pediatric inpatient tower Phase II: January 2012 to June 2013	20	
	Parking structure at Lot K (1,404)		20

TABLE 3.11.4-8
OPERATION PARKING PROGRAM

	Period	Parking Required	Parking Program
STEP A	Roadway realignment: November 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: January 2008	254	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		121
	Off-site Parking Lot L (296)		59
	Central plant building parking (10)		10
	TCI Phase I: January 2007	589	
	Lot L		237
	Lot M		238
	On-site Parking Lot P (68)		68
	On-site Parking Lot Q (71)		46
STEP B	MCH pediatric outpatient building: June 2007	443	
	On-site Parking Lot Q (71)		25
	On-site Parking Lot R (96)		96
	On-site Parking Lot S (72)		72
	On-site Parking Lot T (87)		87
	Parking structure at Lot K (1,404)		161
STEP C	TCI Phase II: July 2011	280	
	Parking structure at Lot K (1,404)		280
	MCH link building: July 2011	50	
	Parking structure at Lot K (1,404)		50
STEP D	MCH pediatric inpatient tower Phase II: July 2013	184	
	Parking structure at Lot K (1,404)		184

Alternative Transportation

As required by the 2004 CMP for the County, a review has been made of the CMP transit service. A number of transit services exist in the proposed project area, necessitating the following transit impact review. Pursuant to the CMP guidelines, the proposed project is forecasted to generate 34 transit trips (26 inbound and 8 outbound) during the a.m. peak hour and 48 transit trips (14 inbound and 34 outbound) during the p.m. peak hour. Over a 24-hour period, the proposed project is forecasted to generate 459 daily weekday transit trips. It is anticipated that the existing transit service in the proposed project area would be able to accommodate the proposed project–generated transit trips.

Because the CMP does not provide guidance as to what constitutes a transit impact, it cannot be determined whether these person trips would have a significant impact. Nevertheless, given the number of transit trips generated by the proposed project and the existing transit routes in the proposed project vicinity, it can be concluded that the public transit system would not be significantly impacted by the proposed project.

The CMP guidelines require that arterial monitoring intersection locations must be examined if the proposed project would add 50 or more trips during either the a.m. or p.m. weekday peak hours (of adjacent street traffic) at CMP monitoring intersections. Based on the proposed project's trip generation potential, trip distribution, and trip assignment, the proposed project would not add 50 or more trips at the identified CMP intersections during either the weekday a.m. peak hour or p.m. peak hour. Therefore, a CMP intersection traffic impact analysis is not required.

The proposed project would not add 150 or more trips (in either direction) during the weekday a.m. and p.m. peak hours at CMP mainline freeway monitoring locations, as stated in the CMP manual as the threshold for a traffic impact assessment. Therefore, a CMP freeway traffic impact analysis is not required. Based on the result of this CMP evaluation, it is concluded that the proposed project would not have any significant traffic impact on the CMP highway system.

3.11.5 Cumulative Impacts

Future Traffic Operations

For interim years 2008 and 2014, the proposed project, if implemented, would significantly impact the LOS of local intersections. Future traffic operations were evaluated for interim years 2008 and 2014, both with and without proposed project scenarios. The objective of the future traffic operations analysis is to project future traffic growth and the operating conditions that would be expected to result from regional growth in the vicinity of the proposed project site, with and without the proposed project.

To make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (related projects) in the area has been researched at the City of Long Beach and the City of Signal Hill (Appendix J).[13] With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. There are 33 related projects in the City of Long Beach and 10 related projects in the City of Signal Hill that have either been built, but not yet fully occupied, or are being processed for approval. These 43 related projects have been included as part of the cumulative background settings.

Roadway Realignment

As a component of the proposed project, vehicular and pedestrian circulation patterns would be improved through the realignment of selected internal roadways.

Atlantic Avenue/Memorial Medical Center—East 28th Street

During Phase I, the proposed project proposes to remove the west leg of the intersection, in order for the Memorial Drive to be realigned and extended to intersect at East Patterson Street; it will remove the traffic signal and install a stop sign on the east leg, and remove the existing NB left-turn lane.

[13] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

Atlantic Avenue/East Patterson Street

Based on the traffic impact analysis (Appendix J),[14] as part of the proposed realignment, it has been determined that in order to improve this intersection, the raised median on the south leg will need to be modified to provide an exclusive NB left-turn lane. The SB approach will need to be restriped to add an exclusive SB right-turn lane. A red curb will need to be installed on the west side of Atlantic Avenue for 100 feet north of the intersection to prohibit parking. In addition, the west leg of the intersection (the realignment of the Memorial Drive) will need to be developed to provide an exclusive left-turn lane and a shared through/right-turn lane. Finally, a five-phase traffic signal providing protected/permitted left-turn phasing in the NB and SB directions will be installed.

Pasadena Avenue/Willow Street

Based on the traffic analysis (Appendix J),[15] it has been recommended to install a two-phase traffic signal.

Related-Projects Traffic Characteristics

To estimate future on-street conditions prior to implementation of the proposed project, the status of other known development projects (related projects) in the area has been researched at the City of Long Beach and the City of Signal Hill. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. There are 33 related projects located in the City of Long Beach and 10 related projects in the City of Signal Hill that have either been built, but not yet fully occupied, or are being processed for approval. These 43 related projects have been included as part of the cumulative background settings.

The traffic impact analysis (Appendix J)[16] provides the location and a brief description for each of the 43 related projects, as well as the development totals and resultant trip generation for the related projects. The related projects are expected to generate a combined total of 97,016 daily trips on a typical weekday, with 7,720 trips (4,983 inbound and 2,737 outbound) forecasted during the a.m. peak hour and 9,497 (3,801 inbound and 5,696 outbound) during the p.m. peak hour.

The 33 related projects in the City of Long Beach are expected to generate 81,031 trips on a daily basis, with 6,453 trips occurring in the a.m. peak hour and 8,069 trips occurring in the p.m. peak hour.

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[14] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

[15] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

[16] Linscott, Law & Greenspan Engineers. 4 November 2004. *Traffic Impact Analysis*. Prepared for: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105. Prepared by: Linscott, Law & Greenspan Engineers, 1580 Corporate Drive, Suite 122, Costa Mesa, CA 92626. Contact: City of Long Beach, Department of Community Development, 333 West Ocean Boulevard, Long Beach, CA 90802.

The 10 related projects located in the City of Signal Hill are expected to generate 15,985 trips during a typical weekday, with 1,267 trips occurring in the a.m. peak hour and 1,428 trips occurring in the p.m. peak hour. The trip generation potential of these related projects have been included in both year 2008 and year 2014 cumulative background setting, with one exception: The Douglass Park project was not considered in the year 2008 cumulative traffic setting because the anticipated completion year for this related project is year 2020. However, to remain conservative, the traffic impact analysis (Appendix J) included it as part of the year 2014 cumulative traffic setting.

Future analysis was completed for future background traffic conditions for both year 2008 and year 2014. These two traffic projections are listed below.

Year 2008: Future Background Traffic (Existing + Ambient Growth + Related Projects)

An analysis of future (year 2008) background traffic conditions indicates that the same three intersections currently operating at an adverse LOS would continue to operate at an adverse LOS. Furthermore, six additional intersections are projected to operate at an unacceptable operating condition during the a.m. and p.m. peak hour based on the City's LOS standards, with the addition of ambient traffic growth and related projects traffic. There are a total of nine intersections forecast to operate at LOS E or LOS F during the peak hour indicated (Table 3.11.5-1, *Year 2008 Key Impacted Intersections*).

TABLE 3.11.5-1
YEAR 2008 KEY IMPACTED INTERSECTIONS

Key Intersections		A.M. Peak-Hour ICU or HCM/LOS	P.M. Peak-Hour ICU or HCM/LOS
6.	Atlantic Avenue/27th Street	—	**420.20 sec/veh LOS F**
7.	Atlantic Avenue/Willow Street	—	**0.929 LOS E**
9.	Long Beach Boulevard/Willow Street	**0.935 LOS E**	**0.958 LOS E**
13.	Long Beach Boulevard/Spring Street	**0.925 LOS E**	**1.141 LOS F**
19.	Orange Avenue/Spring Street	—	**0.964 LOS E**
20.	Orange Avenue/Willow Street	—	**0.903 LOS E**
21.	Long Beach Boulevard/Wardlow Road	**0.997 LOS E**	**1.028 LOS F**
22.	Long Beach Boulevard/I-405 NB Ramp	**45.00 sec/veh LOS E**	**58.40 sec/veh LOS F**
28.	Pasadena Avenue/Spring Street	—	**41.00 sec/veh LOS E**

The remaining 19 key study intersections are expected to operate at adequate service levels (LOS D or better) during the weekday a.m. and p.m. peak commute hours.

Year 2008: Future Background Traffic (Phase I)

Significant impacts occur when the project increases traffic demand at a signalized study intersection by 2 percent of capacity (ICU ≥ 0.020), or increases the overall intersection delay by more than 2 percent at unsignalized intersections operating at LOS E or F. Traffic associated with the proposed project would significantly impact 11 of the 28 key study intersections (Table 3.11.5-2, *Year 2008 Key Impacted Intersections: Phase I*).

TABLE 3.11.5-2
YEAR 2008 KEY IMPACTED INTERSECTIONS: PHASE I

Key Intersections		A.M. Peak Hour ICU or HCM/LOS	P.M. Peak Hour ICU or HCM/LOS
1.	Atlantic Avenue/Spring Street	**0.910 LOS E**	—
2.	Atlantic Avenue/East 29th Street	—	**625.2 sec/veh LOS F**
6.	Atlantic Avenue/27th Street		**510.6 sec/veh LOS F**
7.	Atlantic Avenue/Willow Street	—	**0.958 LOS F**
8.	Pasadena Avenue/ Willow Street		**654.6 sec/veh LOS F***
9.	Long Beach Boulevard/Willow Street	**0.949 LOS E**	**0.978 LOS E**
13.	Long Beach Boulevard/Spring Street	**0.954 LOS E**	**1.193 LOS F**
21.	Long Beach Boulevard/Wardlow Road	**1.016 LOS F**	**1.065 LOS F**
22.	Long Beach Boulevard/I-405 NB Ramps	**45.90 sec/veh LOS E**	**608.20 sec/veh LOS F**
23.	I-405 SB Ramps/Crest Drive	**46.70 sec/veh LOS E**	—
28.	Pasadena Avenue/Spring Street	—	**1942.1 sec/veh LOS F**

NOTE:
* The LOS for this intersection represents the anticipated LOS with the addition of rerouted traffic due to the recommended eastbound (EB) left-turn restrictions at the Atlantic Avenue and 27th Street intersection.

The implementation of planned and/or recommended improvements at these 11 study intersections completely offsets the impact of the proposed project traffic. The remaining 17 key study intersections would not be impacted by the proposed project.

Year 2014: Future Background (Existing + Ambient Growth + Related Projects)

The traffic impact analysis (Appendix J) indicates that the same 11 intersections identified in year 2008 with Phase I traffic conditions are projected to operate poorly under year 2014 conditions. The remaining 17 key study intersections are forecast to operate at LOS D or better during the commuter peak hours.

Year 2014: Phase I and Phase II Project Traffic

The traffic impact analysis (Appendix J) indicates that traffic associated with Phase I and Phase II of the proposed project would significantly impact the same 11 intersections identified in year 2008 with Phase I traffic conditions. For the other 17 key study intersections, the project ICU and delay (seconds/vehicle) increment at the intersections forecast to operate at an adverse LOS during the a.m. peak hour or p.m. peak hour are less than the maximum allowable thresholds.

The transportation impacts associated with the proposed project were determined based on both year 2008 and year 2014 traffic analysis. The development of the proposed project is anticipated to create 11 significant impacts. As such, the proposed project would be expected to pay a proportional "fair share" of the improvement costs of 7 of the 11 impacted intersections to mitigate the proposed project's traffic impacts.

3.11.6 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to traffic and parking. The proposed project should comply with all requirements of the CMP for the City of Long Beach. This shall include, but not be limited to, trip reduction, deficiency plans, traffic and public transportation improvement requirements, and impact fees, as required. This section identifies recommended roadway improvements that change the intersection geometry to increase capacity. Mitigation measures Transportation-1 and Transportation-2 involve roadway restriping to reconfigure (add lanes to) specific approaches of a key intersection. The identified improvements are expected to mitigate the impact of future nonproject (ambient growth and cumulative projects) traffic, and/or improve LOS to an acceptable range. Mitigation measure Transportation-1 includes recommended improvements for year 2008. Mitigation measure Transportation-2 includes recommended improvements for year 2014. Mitigation measure Transportation-3 includes recommended improvements for parking.

Measure Transportation-1

The following improvements are potential recommendation measures identified to mitigate significantly impacted intersections. The proposed project can be expected to pay a fair share of the construction costs to implement these mitigation measures.

1) Atlantic Avenue/Spring Street
   - Modify existing median and restripe Spring Street to provide a second eastbound (EB) left-turn lane and a second westbound (WB) left-turn lane.
   - Modify the traffic signal as needed.

2) Atlantic Avenue/East 29th Street
   - Restrict EB left-turn movements from 29th Street to northbound (NB) Atlantic Avenue.

6) Atlantic Avenue/East 27th Street
   - Restrict EB left-turn movements from 27th Street to NB Atlantic Avenue.

7) Atlantic Avenue/Willow Street
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

9) Long Beach Boulevard/Willow Street
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

13) Long Beach Boulevard/Spring Street
- Widen and/or restripe to provide an exclusive NB and southbound (SB) right-turn lane.
- Modify the traffic signal, as needed.

21) Long Beach Boulevard/Wardlow Road
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

22) Long Beach Boulevard/I-405 NB Ramps
- Install a traffic signal.

23) I-405 SB Ramps/Crest Drive
- Restripe to provide an exclusive WB right-turn lane.

29) Pasadena Avenue/Spring Street
- Widen and/or restripe to provide an exclusive NB left-turn lane and an EB right-turn lane.
- Install a traffic signal.

Measure Transportation-2

The following improvements are potential recommendation measures identified to mitigated significantly impacted intersections. The proposed project can be expected to pay a fair share of the construction costs to implement these mitigation measures.

1) Atlantic Avenue/Spring Street
- Widen and/or restripe to provide an exclusive northbound (NB) and southbound (SB) right-turn lane.
- Widen and/or restripe to provide a second eastbound (EB) and westbound (WB) left-turn lane.
- Modify the traffic signal, as needed.

7) Atlantic Avenue/Willow Street
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

9) Long Beach Boulevard/Willow Street
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

13) Long Beach Boulevard/Spring Street
- Widen and/or restripe to provide an exclusive NB, SB, and EB right-turn lane.
- Widen and/or restripe to provide a second EB through lane.
- Modify the traffic signal, as needed.

21) Long Beach Boulevard/Wardlow Road
- No physical mitigation measure is feasible; any additional turn lanes would require widening and additional right-of-way.

Impacts would be mitigated through the specified scenario or other comparable scenarios that adhere to the same performance standards.

Measure Transportation-3

Construction and operation impacts to parking for each element of the proposed project shall be mitigated through the implementation of a parking program or comparable measure that provides sufficient long-term parking to meet City of Long Beach code requirements. Long Beach Memorial Medical Center shall keep the City of Long Beach informed of any modifications to the parking program for the proposed project. Construction parking plans shall be submitted to the City of Long Beach at least 30 days prior to the anticipated issuance of a grading permit for each element of the proposed project. Operation parking plans shall be submitted to the City of Long Beach at least 30 days prior to the anticipated issuance of occupancy permits or operation of the specified element of the proposed project.

Roadway Realignment

Construction

Miller Children's Hospital shall submit a construction parking plan to address the 195 parking spaces that are expected to be removed from Lot K as a result of the construction of the roadway realignment element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the loss of the 195 parking spaces shall be offset through the use of 195 of the existing available 259 parking spaces.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 195 parking spaces to replace parking spaces that are expected to be removed from Lot K as a result of the roadway realignment element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. During construction, it is anticipated that the permanent loss of the 195 parking spaces shall be offset through the use of 195 of the existing available 259 parking spaces.

Miller Children's Hospital–Pediatric Inpatient Tower Phase I, Utility Trench, and Central Plant Building

Construction

Miller Children's Hospital shall submit a construction parking plan to address the 155 parking spaces that are expected to be removed from demolition of Parking Lot F (86-space parking structure), existing maintenance yard (14 spaces), and the additional temporary loss of spaces during construction from Lot K (55 spaces) as a result of the construction of the Miller Children's Hospital pediatric inpatient tower Phase I, utility trench, and central plant building element of the proposed project. The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the loss of the 70 parking spaces shall be offset through the use of 70 of the existing available 259 parking spaces. The remaining 85 spaces shall be offset through the use of 85 of the 121 available spaces in Lot N.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 254 additional parking spaces (replace 100 spaces lost as a result of construction, provide 144 spaces for operation of Miller Children's Hospital pediatric inpatient tower Phase I, and provide 10 spaces for operation of the central plant building). The parking analysis identified the availability of 259 excess parking spaces available within the Long Beach Memorial Medical Center campus. It is anticipated that the permanent loss of the 254 parking spaces shall be offset through the use of existing available parking spaces, Lot N, lease of off-site parking spaces, and construction of new parking spaces at the central plant building. The 86 spaces lost from Lot F and the 144 additional spaces required to operate Miller Children's Hospital pediatric inpatient tower Phase I would be provided through the use of 70 existing available spaces within the Long Beach Memorial Medical Center campus, use of the 121 spaces in Lot N, and use of 53 spaces to be leased off site at Lot L (296 space lot). A 10-car parking area would be provided at the central plant building to support operations.

Todd Cancer Institute Phase I

Construction

The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 306 parking spaces that are expected to be removed from Parking Lot A, including 171 spaces permanently removed by the footprint of the building and additional 135 parking spaces to be temporarily removed as a result of construction staging. It is anticipated that the loss of the 306 parking spaces shall be offset through the use of 163 spaces to be leased off site at Lot L, and 143 spaces to be leased off site at Lot M.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 589 additional parking spaces (replace 171 spaces lost as a result of construction, and provide 418 spaces for operation of Todd Cancer Institute Phase I). It is anticipated that the loss of the 589 parking spaces shall be offset through the use of 243 spaces to be leased off site at Lot L, 238 spaces to be leased off site at Lot M, 68 spaces to be provided through development of Lot P on site, and 40 spaces to be provided through development of Lot Q.

Miller Children's Hospital–Pediatric Outpatient Building

Construction

Miller Children's Hospital shall submit a construction parking plan to address the 43 parking spaces that are expected to be removed from Lot K. It is anticipated that the loss of the 43 parking spaces shall be offset through the use of 43 spaces to be provided through development of Lot R.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the permanent need for 443 additional parking spaces (replace 43 spaces lost as a result of construction and provide 400 spaces for operation of the Miller Children's Hospital pediatric outpatient building). It is anticipated that the permanent need for 443 parking spaces shall be offset through the use of 31 spaces in Lot Q, 96 spaces in Lot R, 72 spaces in Lot S, 87 spaces in Lot T, and 157 spaces provided by development of a 1,404-space parking structure within the existing footprint of Lot K, which would also accommodate the 189 parking spaces removed as a result of construction of the parking structure itself.

Todd Cancer Institute Phase II

Construction

The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 275 parking spaces that would be lost to construction (68 parking spaces) and construction staging (207 parking spaces). It is anticipated that the loss of the 275 parking spaces shall be offset through the provision of 275 parking spaces in a 1,404-space parking structure to be developed within the existing footprint of Lot K.

Operation

The Long Beach Memorial Medical Center shall submit a construction parking plan to address the 280 parking spaces that would be lost to construction (68 parking spaces) and operation of the Todd Cancer Institute Phase II (212 parking spaces). It is anticipated that the loss of the 280 parking spaces shall be offset the provision of 280 parking spaces in the 1,404-space parking structure to be developed within the existing footprint of Lot K.

Miller Children's Hospital–Link Building

Construction

Not required.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the 50 parking spaces to support operation of the MCH link building. It is anticipated that the 50 parking spaces required to support operation of the MCH link building shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K.

Miller Children's Hospital–Pediatric Inpatient Tower Phase II

Construction

Miller Children's Hospital shall submit a construction parking plan to address the 20 parking spaces that would be lost to construction staging. It is anticipated that the loss of the 20 parking spaces shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K.

Operation

Miller Children's Hospital shall submit an operation parking plan to address the 184 parking spaces required to support operation of the Miller Children's Hospital pediatric inpatient tower Phase II. It is anticipated that the 184 parking spaces, required to operate the Miller Children's Hospital pediatric inpatient tower Phase II, shall be provided in the 1,404-space parking structure to be constructed within the existing footprint of Lot K.

3.11.7 Level of Significance after Mitigation

Implementation of mitigation measures Transportation-1 and Transportation–2 would reduce significant impacts related to traffic and transportation to below the level of significance. The impacts to 3 of 10 intersections would not be mitigated below the level of significance for the year 2008 planning horizon. The impacts to 5 of 10 intersections would not be mitigated to below the level of significance for the year 2014 planning horizon. The study area intersections are projected to operate at LOS D or better with a V/C ratio less than 1.00 during the peak hours if all of the recommended off-site improvements for interim years 2008 and 2014 are accomplished.

Implementation of mitigation measure Transportation-3 would reduce construction and operation impacts on parking to below the level of significance.

3.12 UTILITIES AND SERVICE SYSTEMS

As a result of the analysis undertaken in the Initial Study for the Long Beach Memorial Medical Center Expansion (proposed project),[1] the City of Long Beach (City) Department of Planning and Building determined that the proposed project may result in environmental impacts to utilities and service systems. Therefore, this issue is being carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to utilities and service systems and to identify potential alternatives.

The analysis of utilities and service systems includes a description of the regulatory framework that guides the decision-making process, existing conditions of the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential for impacts to utilities and service systems has been analyzed in accordance with the methodologies and information provided by the Land Use element of the Long Beach General Plan,[2] the Open Space element of the Long Beach General Plan,[3] and the City of Long Beach Municipal Code.[4]

3.12.1 Regulatory Framework

State

California Urban Water Management Planning Act

The California Urban Water Management Planning Act (CUWMPA)[5] requires urban water suppliers to initiate planning strategies to ensure an appropriate level of reliability in its water service. The CUWMPA states that every urban water supplier that provides water to 3,000 or more customers, or that provides more than 3,000 acre-feet of water service annually, should make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its various categories of customers during normal, dry, and multiple-dry years. The CUWMPA describes the contents of Urban Water Management Plans, as well as methods for urban water suppliers to adopt and implement the plans. Under the CUWMPA, the proposed project would be subject to the City of Long Beach Stormwater Management Plan (LBSWMP).

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[1] City of Long Beach, Department of Planning and Building. 20 August 2004. *Initial Study for the Long Beach Memorial Medical Center Expansion Project*. Prepared by: Sapphos Environmental, Inc., 133 Martin Alley, Pasadena, CA 91105.

[2] City of Long Beach, Department of Planning and Building. July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach, Department of Planning and Building. 30 April 1973. *Open Space Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[4] City of Long Beach, 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

[5] State of California. 1983. Urban Water Management Planning Act. California Water Code, Section 10610 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

Local

County of Los Angeles General Plan

Public Facilities Element

The Public Facilities element of the County of Los Angeles General Plan[6] describes existing systems in the County of Los Angeles that provide water supply and distribution, flood protection, water conservation, sewerage, water reclamation, and solid waste disposal. This document sets forth County policy on these systems by identifying a series of five broad goals and 25 supporting policies. There are five goals presented in the Public Facilities element that are relevant to the evaluation of the proposed project.

- Mitigation of hazards and elimination of adverse impacts in providing water and waste services
- Protection of the health, safety, and welfare of all residents in providing water and waste services
- Improved systems of resource use, recovery, and reuse
- Efficient water and waste management services
- A high quality of coastal water, surface water, and groundwater

Policies in support of these goals include improving coordination among operating agencies of all water and waste management systems, promoting the advancement of technology to reduce the volume of liquid waste, and facilitating the recycling of wastes such as metal, glass, paper, and textiles. The County of Los Angeles General Plan provides land use guidance for the area within which the proposed project would be located.

City of Long Beach Stormwater Management Plan

The CUWMPA requires water suppliers to develop water management plans every five years to identify short-term and long-term water demand management measures to meet growing water demands during normal, dry, and multiple-dry years.[7] The LBSWMP[8] is being implemented to meet the objectives of effectively prohibiting non-storm water discharges and reducing the discharge of pollutants to the maximum extent practicable (MEP), such that these discharges will not adversely impact the beneficial uses of receiving waters. Essentially, the City's ultimate objective is to comply with the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act.

[6] County of Los Angeles, Department of Regional Planning. 1993. *Streamlined County of Los Angeles General Plan*. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

[7] State of California. 1983. Urban Water Management Planning Act. California Water Code, Section 10610 et seq. Available at: http://www.leginfo.ca.gov/calaw.html

[8] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at http://www.lbstormwater.org/plan/

The LBSWMP is a comprehensive program containing several elements, practices, and activities aimed at reducing or eliminating pollutants in storm water to the MEP. The programs that are relevant to the proposed project that contribute toward preventing and mitigating storm water pollution include the following:

- Street Maintenance, which consists of Street Sweeping, Sidewalk and Alley Cleaning, and Maintenance Operations
- Sewage Systems Operations and Maintenance
- Storm Drain Systems Operation and Maintenance
- Municipal Facilities Maintenance
- Public Construction Activities
- Landscaping Maintenance

The LBSWWP also addresses the planning of development projects and construction of projects not within the public street right-of-ways.

Los Angeles County Integrated Waste Management Plan

The California Integrated Waste Management Act of 1989 (AB 939) requires that the responsibility for solid waste management be shared between state and local governments. The State of California has directed the County of Los Angeles to prepare and implement a local integrated waste management plan in accordance with AB 939. The Los Angeles County Integrated Waste Management Plan Executive Summary presents the countywide goals and objectives for integrated solid waste management and describes the County of Los Angeles's system of governmental solid waste management infrastructure and the current system of solid waste management in the cities and unincorporated areas of the County. This document also summarizes the types of programs planned for individual jurisdictions and describes countywide programs that could be consolidated.[9]

The Los Angeles County Integrated Waste Management Plan, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element, describes the County of Los Angeles's approach to dealing with a broad range of solid waste issues, including processing capacity, markets for recovered materials, waste reduction mandates, waste disposed at Class I and Class II disposal facilities, allocation of orphan waste (waste that comes from an unknown origin), the accuracy of the State Disposal Reporting System (DRS), and California Integrated Waste Management Board (CIWMB) enforcement policy. This document also reports the Los Angeles County Integrated Waste Management Task Force recommendations that can be implemented at the state and local levels to improve the current waste management system. The task force's recommendations focus on improving the quality of programs, rather than relying on quantity measurements in complying with the State of California's waste reduction mandates.[10] The proposed project would be subject to the Los Angeles County Integrated Waste Management Plan.

[9] County of Los Angeles, Department of Public Works. 1997. *Los Angeles County Integrated Waste Management Summary Plan, Executive Summary*. Contact: 900 South Fremont Avenue, Alhambra, CA 91803.

[10] County of Los Angeles, Department of Public Works. 2001. *Los Angeles County Integrated Waste Management Plan, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element*. Contact: 900 South Fremont Avenue, Alhambra, CA 91803.

3.12.2 Existing Conditions

Wastewater Treatment

Existing sewer lines serve the proposed project area (Figure 3.12.2-1, *Existing Sanitary Sewer, Storm Drain, and Water Lines in the Proposed Project Vicinity*). Sanitary sewer service is provided by the Long Beach Water Department. In Atlantic Avenue, from 28th Street north to Columbia Street, there is an existing 18-inch sewer line east of the Atlantic Avenue centerline. This sewer line connects to an existing 21-inch sewer line located approximately at the centerline of Columbia Street. From this point, the sewer line flows west to Long Beach Boulevard then flows south in an 18-inch sewer line that connects to a manhole west of the Long Beach Boulevard centerline and north of Patterson Street.

The majority of wastewater from the City of Long Beach is treated at the Joint Water Pollution Control Plant (JWPCP) of the County Sanitation District of Los Angeles, which is operated by the County of Los Angeles. The remaining portion of the City's wastewater is delivered to the Long Beach Water Reclamation Plant. The Long Beach Water Reclamation Plant provides primary, secondary, and tertiary treatment for 25 million gallons of wastewater per day. The plant serves a population of approximately 250,000 people, including a portion of the 460,000 residents of the City of Long Beach, with nearly 5 million gallons per day of the treated water directed for reuse at more than 40 sites (Appendix K, *Utilities Analysis*).[11] The City of Long Beach Water Department operates and maintains nearly 765 miles of sanitary sewer line and delivers more than 40 million gallons per day to County of Los Angeles sanitation facilities located on the north and south sides of the City of Long Beach.

Storm Drain System

There are existing 12-, 15-, 18-, and 21-inch storm drain lines located in Willow Street (Figure 3.12.2-1). The regional storm drain system is sized in a manner to handle the storm water flows from surrounding areas, accounting for numerous acres of land area that feed into the local storm drain system. Storm water runoff from areas east of Atlantic Avenue and areas north of Spring Street are conveyed to a 54-inch storm drain that traverses east-west through the hospital site. A pump station is located at the west side of the railroad tracks, which leads the storm water toward the Los Angeles River.[12]

Water Supply

Water service is provided by the City of Long Beach Water Department. An existing 12-inch water line is located approximately 15 feet east of Long Beach Boulevard centerline between Willow Street and Spring Street. At Patterson Street, an 8-inch water line connects from the Long Beach Boulevard 12-inch water line to the Atlantic Avenue 8-inch water line (Figure 3.12.2-1). There are existing fire hydrants and water service vaults behind the existing curb line. Fire hydrant laterals are present on larger water services lines.

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[11] Moffatt & Nichol. 12 October 2004. *Long Beach Memorial Medical Center Expansion, Utilities Analysis*. Prepared for: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90801. Prepared by: Moffatt & Nichol, 250 West Wardlow Road, Long Beach, CA 90807.

[12] Moffatt & Nichol. 12 October 2004. *Long Beach Memorial Medical Center Expansion, Utilities Analysis*. Prepared for: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90801. Prepared by: Moffatt & Nichol, 250 West Wardlow Road, Long Beach, CA 90807.

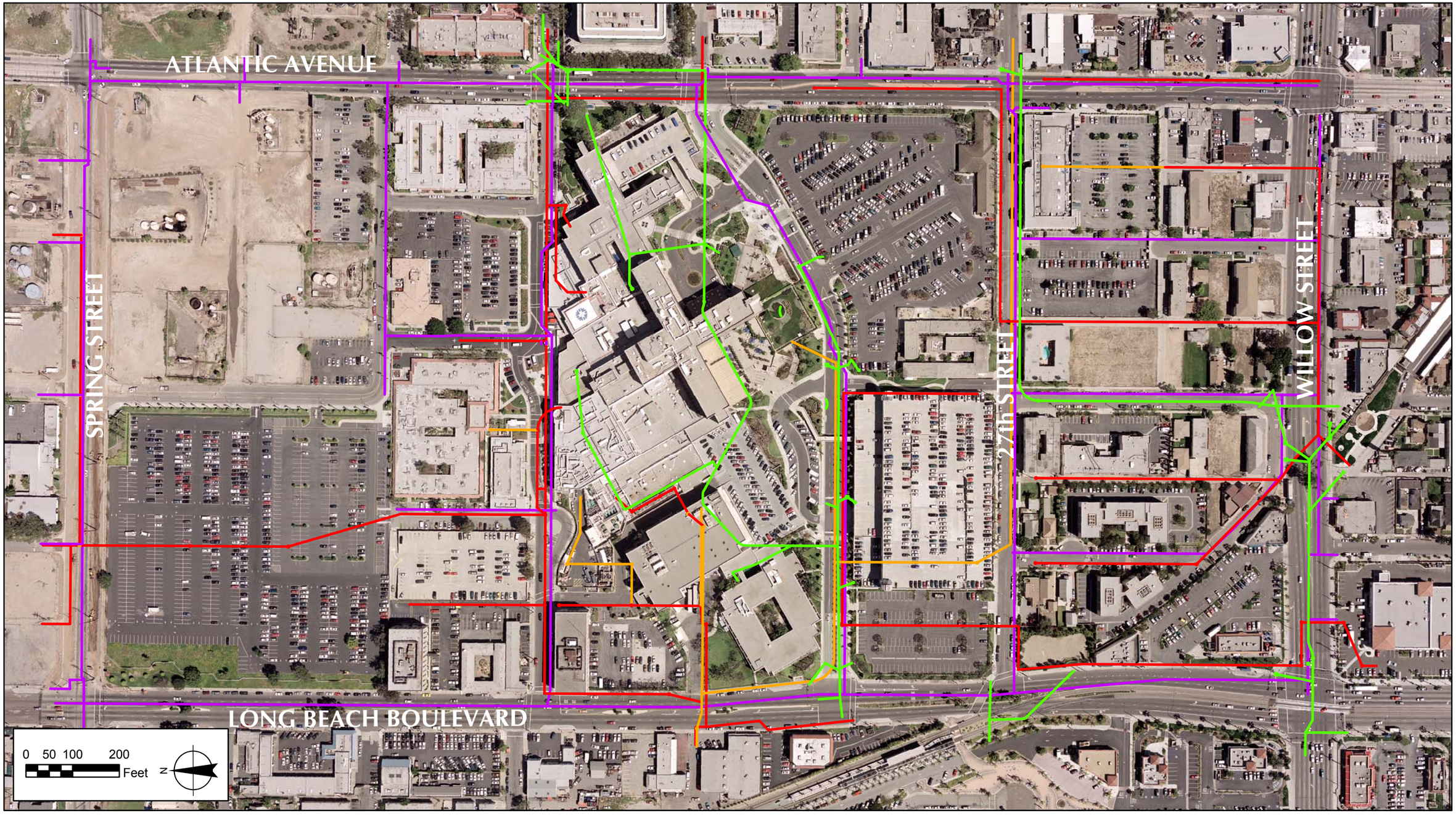

FIGURE 3.12.2-1
Existing Sanitary Sewer, Storm Drain,
and Water Lines in the Proposed Project Vicinity

Potable water would be supplied by the City of Long Beach Water Department. According to the 2002 Water Quality Report of the City of Long Beach Water Department, approximately 46 percent of the water serving the City of Long Beach is supplied by groundwater, and the remaining 54 percent is provided through purchased, imported surface water. The City of Long Beach Water Department purchases treated surface water from the Metropolitan Water District of Southern California and treats groundwater pumped from 29 wells around the Long Beach area at its groundwater treatment plant.

Solid Waste

Long Beach Memorial Medical Center (LBMMC) waste is collected under private contract to a certified waste hauler, which takes the waste to the Sunshine Canyon, Puente Hills, Brea Canyon, and Prima Desheca permitted landfills in Los Angeles and Orange Counties. The waste hauler anticipates that the proposed project's approximately 50-percent expansion in capacity could be accommodated by these existing permitted landfills.[13] Only the Puente Hills landfill is certified to receive red-bag hazardous medical waste. The cost of accepting red-bag waste at the landfill is approximately 50 percent more per ton; therefore, implementation of a waste disposal separation program would reduce the costs of disposal and allow use of the other permitted landfills on a continuing basis.

3.12.3 Significance Threshold

The potential for the proposed project to result in impacts related to utilities and service systems was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines:

A project would normally be considered to have a significant impact to utilities and service systems when the potential for any one of the following seven thresholds occurs:

- Exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board
- Requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Lacks sufficient water supplies available to serve the proposed project from existing entitlements and resources or will require new or expanded entitlements
- Results in a determination by the wastewater treatment provider that serves or may serve the proposed project that it does not have adequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments

[13] Gerald Perissi, *Personal Communication*, 7 July 2004. General Manager, BFI, Inc., Gardena Division, 14905 South San Pedro, Gardena, CA 90247.

- Is not served by a landfill with sufficient permitted capacity to accommodate the proposed project's solid waste disposal needs

- Does not comply with federal, state, and local statutes and regulations related to solid waste

3.12.4 Impact Analysis

Wastewater Treatment

The proposed project would include an approximately 50-percent increase in the capacity and a commensurate increase in wastewater treatment requirements. Sewer laterals serving the Miller Children's Hospital (MCH) outpatient building, link building, and central plant building would connect to an 18-inch sewer line in Atlantic Avenue. The City of Long Beach Water Department is presently completing a study of ways to improve the available capacity in the 18-inch and 21-inch trunk sewer that passes around and through the LBMMC campus (Campus). This work is being prepared in anticipation of receiving the LBMMC sewer connection application for the new buildings. Within the proposed project area, manholes would be adjusted to the street design grade. Sewer laterals serving the Todd Cancer Institute (TCI) would connect to the 15-inch City of Long Beach sewer line in an easement running north and south through the LBMMC property east of the proposed TCI building. Capacity of the 15-inch sewer line in the adjacent easement would require further study and discussions with the City of Long Beach Water Department. The 15-inch sewer line traversing the parking lot in a north-south direction from Spring Street to Columbia Street is anticipated to be relocated on the ultimate build-out of TCI.[14]

The proposed project would not result in significant impacts relating to the wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board[15] or result in the expansion or construction of new water or wastewater treatment facilities. The proposed project would, therefore, not result in the evaluation of constituents regulated by wastewater treatment requirements. All wastewater from the proposed project would flow into the existing sewer system. Incorporation of best management practices (BMP) would be capable of reducing the amount of polluted runoff from parking lots and landscaped areas, therefore making the runoff from the site less polluted than the existing condition. Therefore, the proposed project would not be expected to result in an exceedance of wastewater treatment requirements, or the expansion or construction of new water or wastewater treatment facilities.

Storm Drain System

The proposed improvements do not carry a component that would otherwise increase storm water runoff beyond normal rainfall amounts, as it is in the existing condition.

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[14] Moffatt & Nichol. 12 October 2004. *Long Beach Memorial Medical Center Expansion, Utilities Analysis*. Prepared for: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90801. Prepared by: Moffatt & Nichol, 250 West Wardlow Road, Long Beach, CA 90807.

[15] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Contact: 320 West Fourth Street, Suite 200, Los Angeles, CA 90013.

Storm water drainage conditions that result from the planned project would be substantially the same as existing conditions. The drainage would continue to follow a similar pattern, with similar velocities and quantities.[16]

The proposed project would not result in significant impacts related to the need for new or expanded storm water drainage systems. The proposed project's storm water would be accommodated by the existing storm drain system. The drainage would continue to follow a similar pattern, with similar velocities and quantities. Therefore, the proposed project would not be expected to result in significant impacts to storm drain systems.

Water Supply

Implementation of the proposed project would have a less than significant impact on the supply of water resources. The existing 8-inch water line in Long Beach Memorial Drive is in conflict with the proposed location of the acute care building. The 8-inch water line would be relocated to the realigned Patterson Street and connected to an existing 8-inch water line east of the Atlantic Avenue centerline. Additional 6-inch fire water lines would be installed to new fire hydrant locations.

The City of Long Beach Water Department has informed the Long Beach Memorial Medical Center that there are sufficient supplies to serve the proposed project from existing entitlements and resources (Appendix K). Therefore, the proposed project would not be expected to exceed existing entitlements allocated for the City of Long Beach.

Solid Waste

Both the construction and operational phases of the proposed project would be expected to generate wastes requiring disposal in accordance with local and state laws, including recycling requirements. Because construction of the proposed project would result in outpatient cancer services encompassing approximately 125,930 gross square feet of new space and approximately 200,000 gross square feet in the MCH, additional medical waste would be generated at the site. Medical waste is considered to be hazardous waste and is governed by the State of California Medical Waste Management Act (MWMA), which is enforced by the City of Long Beach as its own local enforcement agency in a (Certified Unified Program Agency) CUPA agreement with the City of Signal Hill.

Implementation of the proposed project would generate solid waste during both construction and operation. Construction of the proposed project would require the demolition of the WIC Building (4,500 square feet [SF]) and parking structure (50,216 SF), thereby generating solid waste from building debris, which constitutes a significant impact requiring the consideration of mitigation to ensure compliance with the California Solid Waste Management Act of 1989.

Postdevelopment-related activities over the life of the proposed project would increase the generation of solid waste. The increase could result in a potentially significant impact to the County of Los Angeles's solid waste management infrastructure, requiring the consideration of mitigation measures that would ensure compliance with the California Solid Waste Reuse and Recycling Access Act of 1991.

[16] Moffatt & Nichol. 12 October 2004. *Long Beach Memorial Medical Center Expansion, Utilities Analysis*. Prepared for: Long Beach Memorial Medical Center, 2801 Atlantic Avenue, Long Beach, CA 90801. Prepared by: Moffatt & Nichol, 250 West Wardlow Road, Long Beach, CA 90807.

3.12.5 Cumulative Impact

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, Project Description, Table 2.6-1, *List of Related Projects*, would not result in cumulative impacts related to utilities and service systems. Because the impacts from utilities and service systems expected from the implementation of the proposed project do not affect lands outside the boundaries of the proposed project site, these impacts do not create any cumulative impacts on the environment outside of the proposed project boundaries.

3.12.6 Mitigation Measures

Measure Utilities-1

Diversion of at least 50 percent of the construction solid waste shall be undertaken to ensure compliance with applicable federal, state, and local statutes related to solid waste and reduce direct and cumulative impacts from construction to below the level of significance. Prior to advertising for construction bids for the Miller Children's Hospital (MCH) pediatric inpatient tower Phases I and II, central plant building, and utility trench, the Office of Statewide Health Planning and Development (OSHPD) shall ensure that the plans and specifications include the requirement for the construction contractor to comply with the Solid Waste Management Act of 1989. To ensure conformance with the Solid Waste Management Act of 1989, the OSHPD shall require the construction contractor to manage the solid waste generated during construction of each element of the proposed project by diverting at least 50 percent of it from disposal in landfills, particularly Class III landfills, through source reduction, reuse, and recycling of construction and demolition debris. The construction contractor shall submit a construction solid waste management plan to the OSHPD for approval prior to initiation of demolition activities for the MCH pediatric inpatient tower Phase I, central plant building, and utility trench. The construction contractor shall demonstrate compliance with the solid waste management plan through the submission of monthly reports during demolition activities that estimate total solid waste generated and diversion of 50 percent of the solid waste.

Measure Utilities-2

Diversion of at least 50 percent of the construction solid waste shall be undertaken to ensure compliance with applicable federal, state, and local statutes related to solid waste and reduce direct and cumulative impacts from construction to below the level of significance. Prior to advertising for construction bids for Todd Cancer Institute (TCI) Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, roadway realignment, and parking facilities, the City of Long Beach shall ensure that the plans and specifications include the requirement for the construction contractor to comply with the Solid Waste Management Act of 1989. To ensure conformance with the Solid Waste Management Act of 1989, the City of Long Beach shall require the construction contractor to manage the solid waste generated during construction of each element of the proposed project by diverting at least 50 percent of it from disposal in landfills, particularly Class III landfills, through source reduction, reuse, and recycling of construction and demolition debris. The construction contractor shall submit a construction solid waste management plan to the City of Long Beach for approval prior to initiation of demolition activities for TCI Phases I and II, MCH pediatric outpatient building, MCH link building, roadway realignment, and parking facilities. The construction contractor shall demonstrate compliance with the solid waste management plan through the submission of monthly reports during demolition activities that estimate total solid waste generated and diversion of 50 percent of the solid waste.

Measure Utilities-3

The Office of Statewide Health Planning and Development (OSHPD) shall review the plans and specifications for the Miller Children's Hospital pediatric inpatient tower Phases I and II and central plant building to ensure that the existing Long Beach Memorial Medical Center service area has adequate trash and recycling receptacles for compliance with applicable federal, state, and local statutes related to solid waste and to reduce direct and cumulative impacts from project operation and maintenance to below the level of significance. Such compliance may be partially attained through the provision of a service area for the central plant building. Prior to advertising for construction bids for each new building, the OSHPD shall ensure that the plans and specifications designating locations for trash receptacles and recycling receptacles are in conformance with the California Solid Waste Reuse and Recycling Access Act of 1991. Wherever trash receptacles are provided throughout the proposed project site, a recycling receptacle for plastic, aluminum, and metal shall also be provided. Signs encouraging patrons to recycle shall be posted near each recycling receptacle.

Measure Utilities-4

The City of Long Beach shall review the plans and specifications for the Todd Cancer Institute Phases I and II, Miller Children's Hospital (MCH) pediatric outpatient building, MCH link building, and parking facilities to ensure that adequate service areas are provided for trash and recycling receptacles for compliance with applicable federal, state, and local statutes related to solid waste and to reduce direct and cumulative impacts from project operation and maintenance to below the level of significance. Prior to advertising for construction bids for each new building, the City of Long Beach shall ensure that the plans and specifications designating locations for trash receptacles and recycling receptacles are in conformance with the California Solid Waste Reuse and Recycling Access Act of 1991. Wherever trash receptacles are provided through the proposed project site, a recycling receptacle for plastic, aluminum, and metal shall also be provided. Signs encouraging patrons to recycle shall be posted near each recycling receptacle.

3.12.7 Level of Significance after Mitigation

Implementation of mitigation measures Utilities-1 through Utilities-4 would reduce potential impacts related to utilities and service systems to below the level of significance.

SECTION 4.0
ALTERNATIVES TO THE PROPOSED PROJECT

This section of the Environmental Impact Report (EIR) describes alternatives to the Long Beach Memorial Medical Center Expansion (proposed project). Alternatives have been analyzed in a manner that is consistent with the recommendations of Section 15126.6 of the State of California Environmental Quality Act (CEQA) Guidelines, which require a comparative evaluation of a range of reasonable alternatives to the proposed project, or to alternative locations for the proposed project that would feasibly attain most of the basic objectives of the proposed project but would avoid or substantially lessen any of the significant effects of the proposed project. The discussion of alternatives is intended to address four requirements pursuant to CEQA:

- The provision of alternatives to the proposed project or its location that may be capable of avoiding or substantially reducing any significant effects that a proposed project may have on the environment

- The provisions of alternatives capable of accomplishing most of the basic objectives of the proposed project and potentially avoiding or substantially lessening one or more of the significant effects

- The provision of sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project

- The No Project Alternative analysis of what would be reasonably expected to occur in the foreseeable future if the proposed project were not approved

Pursuant to Section 15126.6(e)(2) of the State CEQA Guidelines, if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the feasible action alternatives. The analysis of alternatives should be limited to those that the City of Long Beach (City), the Lead Agency, determines could feasibly attain most of the basic objectives of the proposed project. Section of 15364 of the State CEQA Guidelines defines feasibility as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental legal, social, and technological factors."

Alternatives addressed in this EIR were derived from comments received in response to the Notice of Preparation (NOP), comments provided at EIR scoping meetings and other community meetings, and information derived from the technical analysis. During the year 2030 visioning process to meet the requirements of the Office of Statewide Health Planning and Development (OSHPD), the Long Beach Memorial Medical Center (LBMMC) and Miller Children's Hospital (MCH) evaluated the feasibility of using off-site properties to accommodate anticipated demands for services.[1] There are several properties, located north, south, and east of the existing LBMMC campus (Campus) that are available for development. However, these properties were determined to be socially and economically unacceptable for the expansion of the MCH and the consolidation and relocation of the Todd Cancer Institute (TCI) for two key reasons: (1) the properties are separated from the existing licensed hospitals by major thoroughfares, and (2) the cost of property acquisition would significantly increase the cost of

[1] K. McLaughlin Diaz. 28 May 2004. *Memorial Care, Memorial Health Services, Master Plan: Long Beach Memorial Medical Center, Miller Children's Hospital*. Prepared for: Memorial Health Services, Long Beach Memorial Medical Center and Miller Children's Hospital, 2801 Atlantic Avenue, Long Beach, CA90806-1737. Contact: 222 Vallejo Street, San Francisco, CA 94111.

each improvement. Therefore, LBMMC and MCH determined that the proposed project objectives would be best achieved through a more effective utilization of properties currently owned by Memorial Health Services.

The alternatives analysis is directed toward parking. The proposed project seeks a variance to accommodate parking through the leasing of off-site parking. In addition to the No Project Alternative required to be analyzed pursuant to CEQA, this EIR considers two other alternatives that avoid the reliance on off-site parking, thus providing a reasonable range of alternatives:

- No Project Alternative
- Alternative A—Consists of delaying the construction start for TCI Phase I for one year to accomplish the development of six on-site surface parking areas (Lot N, Lot P, Lot Q, Lot R, Lot S, and Lot T)
- Alternative B—Consists of expedited construction of the 1,700-space parking structure to be operational by January 2007

A summary inventory of the proposed land areas under Alternatives A and B is presented in Table 4.0-1, *Summary of Proposed Land Areas under Alternatives A and B*.

TABLE 4.0-1
SUMMARY OF PROPOSED LAND AREAS UNDER ALTERNATIVES A AND B

	TCI Phase I	TCI Phase II	MCH Pediatric Inpatient Tower Phase I	MCH Pediatric Inpatient Tower Phase II	MCH Utility Trench	MCH Central Plant Building	MCH Pediatric Outpatient Building	MCH Link Building	Roadway Realignment	Parking Program
Alternative A										
Number of required parking spaces	418	212	144	184	0	10	400	50	0	1,730
Height of building (feet)	54	33	84	148	0	20	84	54	0	84
Building space (gross square feet)	83,360	42,360	129,220	86,030	1,000 linear feet .	3,500	80,000	20,000	N/A	N/A
Building levels	3 stories	2 stories	4 stories + basement	3 stories	0	1 story	5 stories + basement	3 stories	N/A	4 stories
Number of employees	122[1]	60	310	100	0	0	138[2]	20	0	0
Alternative B										
Number of required parking spaces	360	282	124	204	0	10	400	50	0	1,730
Height of building (feet)	54	33	84	148	0	20	84	54	0	84
Building space (gross square feet)	71,690	54,030	111,129	104,121	1,000 linear feet	3,500	80,000	20,000	N/A	N/A
Building levels	3 stories	2 stories	4 stories + basement	3 stories	0	1 story	5 stories + basement	3 stories	N/A	4 stories
Number of employees	105*	77	267	143	0	0	138**	20	0	0

NOTES:
* Existing employees who would be consolidated from other locations on and off the Campus.
** Existing employees who would be consolidated from other locations on the Campus

The effectiveness of each of the alternatives in achieving the basic objectives of the proposed project has been evaluated with regard to each of the proposed alternative's ability to meet the statement of project objectives. A summary of the ability of the proposed project and alternatives under consideration to meet the objectives of the proposed project is presented in Table 4.0-2, *Summary of Ability of Proposed Project and Alternatives to Attain Project Objectives*. As shown in the table, the proposed project would meet all of the basic objectives of the project. Although the No Project Alternative is not capable of meeting any of the basic objectives of the proposed project, it has been included in this EIR and analyzed as required by CEQA.

TABLE 4.0-2
SUMMARY OF ABILITY OF PROPOSED PROJECT AND ALTERNATIVES TO ATTAIN PROJECT OBJECTIVES

Proposed Project	No Project Alternative	Delayed Start of TCI	Expedited Construction of Parking Structure
Objectives			
1. Continue the legacy of providing a high-quality environment that supports the health and well-being of patrons through the provision of a comprehensive system of programs and facilities that provide prevention, screening, diagnosis, treatment, and monitoring services to meet existing and anticipated demand in the community through the year 2020.			
Yes	No	No	Yes
2. Expand and reorganize the existing approximately 1,000,000 square feet of combined inpatient, outpatient, and appurtenant facilities by approximately 500,000 square feet to accommodate existing and anticipated demand through the year 2020.			
Yes	No	Yes	Yes
3. Comply with the regulations developed by OSHPD as mandated by Senate Bill (SB) 1953 (Chapter 740, 1994), an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983.			
Yes	No	Yes	Yes
4. Consolidate and relocate the 24 diverse outpatient treatment modalities of the TCI that are currently dispersed in 24 sites, located on and off the Campus, to a single facility in proximity to the inpatient services provided at the LBMMC.			
Yes	No	No	Yes
5. Provide a dedicated facility for the outpatient well care, screening, imaging, diagnosis, treatment, and monitoring of cancer and non-cancer patients to accommodate the anticipated need for 375 patients to be served per day by year 2007, and to accommodate approximately 500 patients per day to meet anticipated needs through 2020.			
Yes	No	No	No
6. In the immediate proximity of the MCH, provide a pediatric inpatient tower that would increase capacity for pediatric surgical cases that would satisfy a mandate from the California Department of Health Services to provide seven operating rooms by January 2008. An additional three operating rooms would need to be provided between years 2008 and 2015 to meet anticipated demand through the year 2020.			
Yes	No	Yes	No
7. In the immediate proximity of the MCH, provide a pediatric inpatient tower that would increase capacity for newborn intensive care services and general pediatric patients. The new pediatric inpatient tower will be sized to accommodate the 10-percent increase in the need for pediatric inpatient treatment of children under the age of 15 between years 2000 and 2003, and the projected additional increase of 1 percent per year through year 2020. The increase in capacity would require 72 additional beds by year 2008 and another 92 additional beds between years 2008 and 2015 to meet anticipated demand through year 2020.			
Yes	No	Yes	Yes
8. Consolidate and relocate the diverse pediatric outpatient services, well care, screening, diagnosis, treatment, and monitoring into a single, dedicated building in close proximity to the MCH.			
Yes	No	Yes	Yes
9. Within the Campus, provide a building designated for mixed uses to accommodate retail uses, such as a gift shop, florist, and food and beverage service, to serve MCH employees, patients, and visitors.			
Yes	No	Yes	Yes
10. Provide adequate access and egress to the Campus from Long Beach Boulevard and Atlantic Avenue.			
Yes	Yes	Yes	Yes
11. Provide adequate infrastructure to support circulation within the Campus.			
Yes	Yes	Yes	Yes
12. Provide sufficient parking capacity to comply with the City of Long Beach parking ordinance.			
Yes	Yes	Yes	Yes

As a result of the analysis undertaken in this EIR, it was determined that the No Project Alternative would not be capable of meeting most of the basic objectives of the proposed project. Although the No Project Alternative would avoid significant impacts to air quality and traffic and transportation through avoiding construction of new facilities, it would fail to address the existing and anticipated demand for expanded inpatient and outpatient health care services in the community. Alternatives A and B were identified as means of addressing feasible engineering solutions to avoiding the reliance on the use of parking spaces leased at off-site locations to meet City of Long Beach Code requirements for parking. Although Alternatives A and B would be feasible in relation to engineering, the alternatives would create social and economic issues that would compromise the overall feasibility of the proposed project. Specifically, the TCI has a compelling existing need for a new facility. In Alternative A, the delay of construction by a year to accommodate development of Lots N, P, Q, R, S, and T would exacerbate the existing logistical and operational concerns for the approximately 375 patients per day served by that institution within the LBMMC. In Alternative B, the need to initiate construction of the parking structure in year 2005 would increase the cost to provide sufficient parking in the initial phases of construction from $5.94 million (estimated cost to support development of off-site parking lots that would be leased to LBMMC and MCH) to $23.8 million to construct an on-site parking structure (Table 2.4-1, *Estimated Capital Improvement Costs*).

Like many projects, the No Project Alternative is an environmentally superior alternative in that it does not involve significant impacts to air quality and traffic and transportation. Of the action alternatives, the significant impacts are comparable; however, the proposed project would reduce peak-quarter construction impacts to air quality from heavy equipment emissions by better distributing the use of heavy equipment on the Campus over a longer construction period.

4.1 NO PROJECT ALTERNATIVE

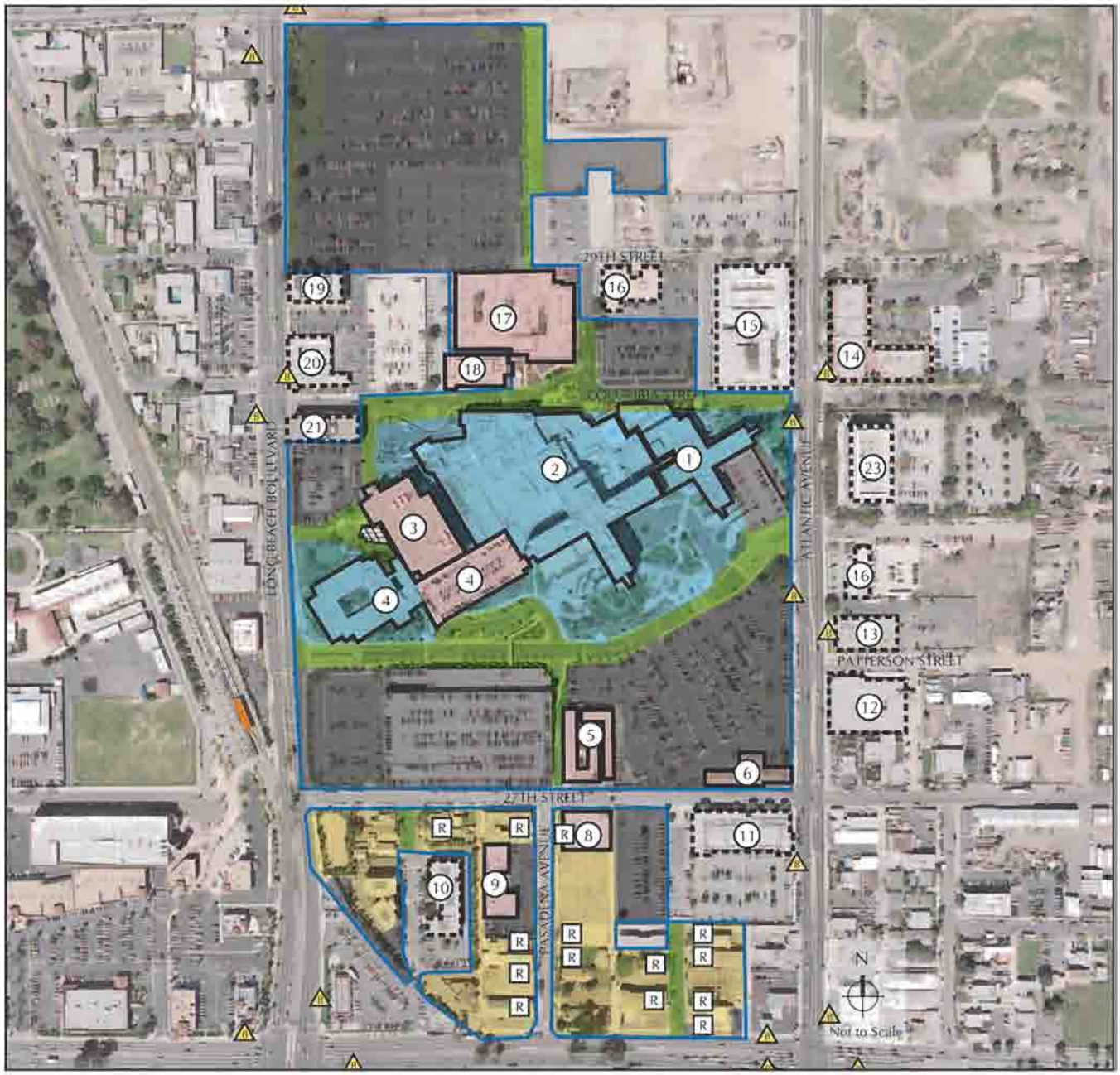
Under the No Project Alternative, the Campus would continue to function with the approximately 1,213,945 gross square feet of existing conditioned on-site facilities (Figure 4.1-1, *No Project Alternative*). As in the existing condition, the demand for space would be augmented through the lease of off-site facilities. The Master Plan of Land Uses would remain in its existing configuration and distribution of six general land uses: inpatient medical facilities, outpatient medical facilities, mixed use, utilities, circulation, and parking. The two licensed hospitals, LBMMC and MCH, would remain in their existing configuration. However, MCH would not be able to conform to licensing requirements by January 2008.

The No Project Alternative fails to meet most of the basic objectives of the proposed project:

- **Objective 1.** Although the existing programs and facilities would continue the legacy of providing a high-quality environment that supports the health and well-being of patrons through the provision of a comprehensive system of programs and facilities that provide prevention, screening, diagnosis, treatment, and monitoring services to meet existing needs, the No Project Alternative would not provide additional space to support the growth of 6 to 9 percent expected through year 2020.

- **Objective 2.** The No Project Alternative would not provide the combined 500,000 square feet of additional space anticipated to be needed to accommodate inpatient, outpatient, and appurtenant facilities required by year 2020.

- **Objective 3.** The No Project Alternative would not allow MCH to comply with OSHPD regulations by year 2008.



LEGEND

- Inpatient
- Outpatient
- Mixed Use
- Utilities
- Circulation
- Parking
- LBMMC Boundary
- Buildings Controlled by LBMMC
- Buildings Controlled by Others
- Blue Line (Willow Station)
- Bus Stop (Long Beach Transit)
- (1) Miller Children's Hospital
- (2) Long Beach Memorial Medical Center
- (3) Administration Building
- (4) West Facility/Rehabilitation Building
- (5) Rehabilitation Gym/Parking
- (6) Ranch House / WIC Medical Center
- (8) Memorial Guest Residence
- (9) Research Building
- (10) Elm Medical Plaza
- (11) 3-Story Medical Office Building
- (12) Convalescent Home
- (13) MOB with CT & MRI Orthopedics
- (14) Hillside Medical Plaza
- (15) 2-Story Atlantic MOB
- (16) Medical Office Building - 1 Story
- (17) Buffums Plaza - 1 Story
- (18) CT & MRI Center
- (19) Medical Office Building
- (20) Aloha Motel
- (21) Medical Office Building
- (23) 4-Story Altantic MOB
- R Residential Buildings

FIGURE 4.1-1
No Project Alternative

- **Objective 4.** The No Project Alternative would fail to provide a dedicated facility to accommodate the diverse outpatient treatment modalities of the TCI that are currently dispersed in 24 sites located on and off the Campus.

- **Objective 5.** The No Project Alternative fails to provide a dedicated facility for the outpatient well care, screening, imaging, diagnosis, treatment, and monitoring of cancer and non-cancer patients to accommodate the anticipated need for 375 patients to be served per day by year 2007, and to accommodate approximately 500 patients per day to meet anticipated needs through year 2020.

- **Objective 6.** The No Project Alternative fails to provide a pediatric inpatient tower that would increase capacity for pediatric surgical cases in accordance with the California Department of Health Services licensing specification to provide dedicated pediatric operating rooms by January 2008.

- **Objective 7.** The No Project Alternative fails to provide a pediatric inpatient tower with the required capacity to accommodate the anticipated 1 percent per year increase in demand for newborn intensive care services and general pediatric patients under the age of 15, through year 2020.

- **Objective 8.** The No Project Alternative fails to consolidate and relocate the diverse pediatric outpatient services, well care, screening, diagnosis, treatment, and monitoring into a single, dedicated building in close proximity to the MCH.

- **Objective 9.** The No Project Alternative fails to provide a building designated for mixed uses to accommodate retail uses, such as a gift shop, florist, and food and beverage service, to serve MCH employees, patients, and visitors.

- **Objective 10.** The No Project Alternative would maintain the existing pattern of internal traffic and circulation, which provides adequate access and egress to the Campus from Long Beach Boulevard and Atlantic Avenue.

- **Objective 11.** The No Project Alternative would maintain the existing network of public streets and private driveways, which provides adequate infrastructure to support circulation within the Campus.

- **Objective 12.** The No Project Alternative would maintain the use of existing surface parking lots and parking structures, which provide sufficient parking supplies and 259 parking spaces in excess of City of Long Beach Code requirements.

4.1.1 Design, Architecture, and Setting

The No Project Alternative would retain the design, architecture, and setting of the existing Campus (Figure 4.1-1).

4.1.2 No Project Alternative Elements

The visioning process undertaken by LBMMC and MCH to develop facilities strategies meeting the mandates of SB 1953 (Chapter 740, 1994), as well as for the modernization of the existing facilities to meet current and projected need and to anticipate the future growth demonstrated that these goals

would not be met by the existing Campus facilities. In the No Project Alternative, the two licensed hospitals, LBMMC and MCH, would continue functioning within the existing hospitals on the Campus. The screening, treatment, and monitoring modalities offered by the TCI would remain dispersed at 11 locations on and off the Campus. Pediatric outpatient, including a child care center, nutrition programs, and outpatient clinics, would remain housed in various structures located on and off the Campus. Memorial Medical Campus Drive, as it extends through the Campus, would remain curved as it is now to meet Atlantic Avenue. Circulation, not including public right-of-ways, within the Campus would generally remain in their existing configuration. A total of 3,452 spaces, including 259 surplus parking spaces, would be expected to remain located in 11 locations throughout the Campus.

4.1.3 Programming

The combined 726 beds provided by the two existing licensed hospital would be expected to be insufficient to support the full range of health services provided to the community of Long Beach in 2001 for several reasons:

- Existing licensed hospitals are at capacity.
- The City of Long Beach General Plan anticipates 6- to 9-percent growth through year 2020.
- There is more and sometimes larger on-unit equipment.
- The Health Insurance Portability and Accountability Act (HIPAA) of 1996 has privacy and confidentiality requirements that have created a need for more space between patient treatment modules, as well as some additional spaces.
- There is increasing recognition of the value of support from family and significant others, creating the need for family zones within patient rooms and additional amenities for families.
- More stringent industry and code standards have created a need for increased space, including around beds, fixtures, and other equipment: Americans with Disabilities Act (ADA) toilet and clearances require greater clearances and larger spaces, and direct observation requirements in intensive care units (ICUs) create a need for additional space.
- Changing patterns of care, such as decentralized nursing and bedside charting, require additional space.
- Infrastructure is growing in areas such as structure, information technology, electrical, and security that would require the utilization of existing space within the two existing licensed hospitals.

4.1.4 Economic Characteristics

The No Project Alternative would preclude LBMMC and MCH from using the funds allocated by the voters of the State of California, through their November 2004 approval of Proposition 61, Children's Hospital Bond Act of 2004.

4.1.5 Engineering Characteristics

The year 2030 visioning process resulted in a determination that strengthening of existing facilities is possible to conform to the mandates of SB 1953 (Chapter 740, 1994) through year 2030. However, it is not possible to strengthen all existing acute care facilities to Category IV, the standard required after year 2030. Therefore, the No Project Alternative would compromise efforts to be prepared to conform to the year 2030 standard for acute care facilities.

4.1.6 Construction Scenario

There would be no construction in the No Project Alternative.

4.1.7 Comparative Impacts

Aesthetics

As with the proposed project, the No Project Alternative would not result in significant impacts related to aesthetics. The operation of the existing structures would continue to remain as they are now. Approximately 1,213,945 gross square feet of structures would likely retain existing facades. As in the existing condition, the buildings would be linked by a series of public roadways, private driveways, sidewalks, lighting, landscaping, and directional signs.

The No Project Alternative would not result in any significant impact to aesthetics, as there would be no anticipated potential to alter existing scenic vistas, state-designated scenic highways, visual character, or light and glare changes. The No Project Alternative would not contribute to the introduction to any new sources of substantial light and glare. However, without the proposed project, the long-term visual character effects would not benefit from improved aesthetic improvement to the proposed project area since it is located in a blighted, physically degraded area designated by the City of Long Beach as the Central Long Beach Redevelopment Area. Furthermore, the existing project area would not be benefited by the long-term visual enhancement to be derived from the completed project and its provision of visually attractive structural and landscape amenities consistent with the existing character of the community.

Air Quality

The No Project Alternative would avoid construction of the TCI building; the MCH inpatient tower, utility trench, and central plant building; the MCH pediatric outpatient building; the MCH link building; roadway realignment; and parking elements. The No Project Alternative would not generate construction emissions with the potential to substantially degrade air quality, or contribute to substantial increases in peak-period emissions. Therefore, the No Project Alternative would not be expected to result in significant impacts to air quality and would not require the implementation of mitigation measures Air-1 through Air-13 specified for the proposed project.

Cultural Resources

The No Project Alterative avoids potential impacts to cultural resources that would result from the implementation of the proposed project. Unlike the proposed project, this alternative would not entail grading (excavation and fill), modification of existing structures, or construction of new structures, thus avoiding the potential for disturbance of paleontological resources or the unanticipated discovery of prehistoric archeological resources or human remains. Therefore, the No Project Alternative would not

require implementation of mitigation measures Cultural-1 through Cultural-3 specified for the proposed project.

Geology and Soils

The No Project Alterative avoids potential impacts to geology and soils that could result from the implementation of the proposed project. Unlike the proposed project, this alternative would not entail grading (excavation and fill), modification of existing structures, or construction of new structures. However, the failure to upgrade existing facilities or construct new facilities to meet the mandates of SB 1953 would ultimately expose people and the existing acute care facilities to potential adverse effects, including the risk of loss, injury, or death. Although the No Project Alternative would not require implementation of mitigation measures Geology-1 through Geology-6 specified for the proposed project, it would preclude LBMMC and MCH from conforming to the mandates of SB 1953 and create a socially unacceptable level of risk to people and property.

Hazards and Hazardous Materials

The No Project Alterative would avoid potential impacts from exposure of people to hazards and hazardous materials (asbestos-containing materials, lead-based paints, and mold). Unlike the proposed project, this alternative would not entail transport, use, emission, or disposal of hazardous materials above the levels currently required for operation of LBMMC, MCH, and appurtenant facilities. Therefore, the No Project Alternative would not require implementation of mitigation measures Hazards-1 through Hazards-15 specified for the proposed project.

Hydrology and Water Quality

The No Project Alterative would avoid potential impacts to hydrology and water quality that could result from the implementation of the proposed project. Unlike the proposed project, this alternative would not entail grading (excavation and fill), modification of existing structures, or construction of new structures. Therefore, the No Project Alternative would not require implementation of mitigation measures Hydro-1 through Hydro-7 specified for the proposed project.

Land Use and Planning

As with the proposed project, the No Project Alternative would not result in significant impacts related to land use and planning. The operation of the two licensed hospitals, LBMMC and MCH, and related facilities and infrastructure, would not conflict with land use designation and adopted goals and policies of the City of Long Beach General Plan Land Use element,[2] which designates the Campus as Land Use Designation (LUD) No. 7 Mixed-Use District. Unlike the proposed project, which would require a change to the existing zoning designation for a portion of land between Spring Street and 29th Street from Regional Highway (CHW) to Planning Development (PD-29) District, Subarea 1, the No Project Alternative would retain the existing zoning designations for the Campus: Institutional (I), PD-29, CHW, and Community Automobile-Oriented (CCA) Districts.[3]

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[2] City of Long Beach, Department of Planning and Building, July 1991. *Land Use Element of the Long Beach General Plan*. Prepared by: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[3] City of Long Beach. 1982. City of Long Beach Municipal Code (Ord. C-5831 § 1, 1982), Chapter 21. Available at: http://www.longbeach.gov/apps/cityclerk/lbmc/title-21/frame.htm

National Pollution Discharge Elimination System

The No Project Alterative would avoid potential impacts related to surface water quality and the need for a National Pollution Discharge Elimination System (NPDES) permit. Unlike the proposed project, this alternative would not entail grading (excavation and fill), modification of existing structures, or construction of new structures. Therefore, the No Project Alternative would not be expected to generate new sources of storm water runoff or contributed pollutants to existing surface waters. Thus the No Project Alternative would not be required to develop a Standard Urban Storm Water Management Plan or implement mitigation measure NPDES-1 specified for the proposed project.

Noise

The No Project Alternative would avoid impacts to the ambient noise that would be expected during the construction phases of the proposed project. Unlike the proposed project, this alternative would entail no demolition of existing buildings, grading, modification of existing structures, or construction of new structures. Thus, there would be no need to operate heavy equipment within 500 feet of sensitive receptors, particularly the existing MCH. Therefore, the No Project Alternative would not require implementation of mitigation measures Noise-1 through Noise-3 specified for the proposed project.

Public Services

As with the proposed project, the No Project Alternative would not result in significant impacts related to public services. The No Project Alternative would continue operation of existing acute and outpatient facilities. Therefore, there would be no need for the provision of, or need for, new or physically altered fire protection, police protection, school, or other public facilities that would require physical alteration of the environment. However, the No Project Alternative would fail to provide adequate capacity to meet the existing and anticipated demand within the City of Long Beach for health care services, which is projected to increase by 6 to 9 percent through year 2020.

Traffic and Transportation

The No Project Alternative would avoid potential impacts to traffic and transportation that could result from the implementation of the proposed project. Unlike the proposed project, this alternative would not accommodate additional capacity to provide health care services; therefore, there would be no anticipated increase in trips and the related contribution to the loads placed on surrounding intersections. The existing 3,452 parking spaces would be sufficient to support ongoing operation of LBMMC, MCH, and appurtenant facilities. Therefore, the No Project Alternative would not require implementation of mitigation measures Transportation-1 through Transportation-3.

Utilities and Service Systems

The No Project Alternative would avoid potential impacts to utilities and service systems that could result from the implementation of the proposed project. Unlike the proposed project, this alternative would not entail major site grading (excavation and fill), demolition of existing structures, or construction of new structures; therefore, the No Project Alternative would not generate solid waste from construction. In addition, the hospital would continue to operate at its existing capacity; therefore, the No Project Alternative would not generate increased levels of solid waste from operations such as that anticipated for the proposed project. Therefore, the No Project Alternative does

not require implementation of mitigation measures Utilities-1 and Utilities-4 specified for the proposed project.

4.2 ALTERNATIVE A

Alternative A differs from the proposed project in that Alternative A delays construction of the TCI until the development of on-site parking (Lots N, P, Q, R, S, and T) is completed (Figure 4.2-1, *Alternative A Site Plan*). All the other elements of the proposed project would be constructed as planned in the proposed project. The delayed construction of the TCI would delay the consolidation and relocation of cancer facilities to a single building dedicated to cancer treatment from the 11 existing locations on and off Campus for a period of approximately one year.

Alternative A meets 11 of the 12 basic objectives of the proposed project:

- **Objective 1.** Alternative A would allow LBMMC and MCH to continue the legacy of providing a high-quality environment that supports the health and well-being of patrons through the provision of a comprehensive system of programs and facilities that provide prevention, screening, diagnosis, treatment, and monitoring services to meet existing needs. Alternative A would provide additional space to support the 6- to 9-percent population growth in the City of Long Beach expected through year 2020.

- **Objective 2.** Alternative A would provide the combined 500,000 square feet of additional space required to accommodate inpatient, outpatient, and appurtenant facilities required by year 2020.

- **Objective 3.** Alternative A would allow MCH to comply with the regulations developed by OSHPD by year 2008.

- **Objective 4.** Alternative A would provide a dedicated facility, in close proximity to the inpatient services provided at the LBMMC, to accommodate the diverse outpatient treatment modalities of the TCI that are currently dispersed in 24 sites on and off the Campus.

- **Objective 5.** Alternative A would fail to provide a dedicated facility for the outpatient well care, screening, imaging, diagnosis, treatment, and monitoring of cancer and non-cancer patients to accommodate the anticipated need for 375 patients to be served per day by year 2007. In this alternative, construction of TCI Phase I would be delayed by a year; thus, the facility would not be available until year 2008. There would be no change in the ability to complete Phase II to accommodate approximately 500 patients per day to meet anticipated needs through year 2020.

- **Objective 6.** Alternative A would provide a pediatric inpatient tower that would increase capacity for pediatric surgical cases, in accordance with the California Department of Health Services licensing specification to provide dedicated pediatric operating rooms by January 2008, through construction of the MCH pediatric inpatient tower Phase I, utility trench, and central plant building. Construction of the MCH pediatric inpatient tower Phase II would be sufficient to accommodate anticipated demand for services through year 2020.

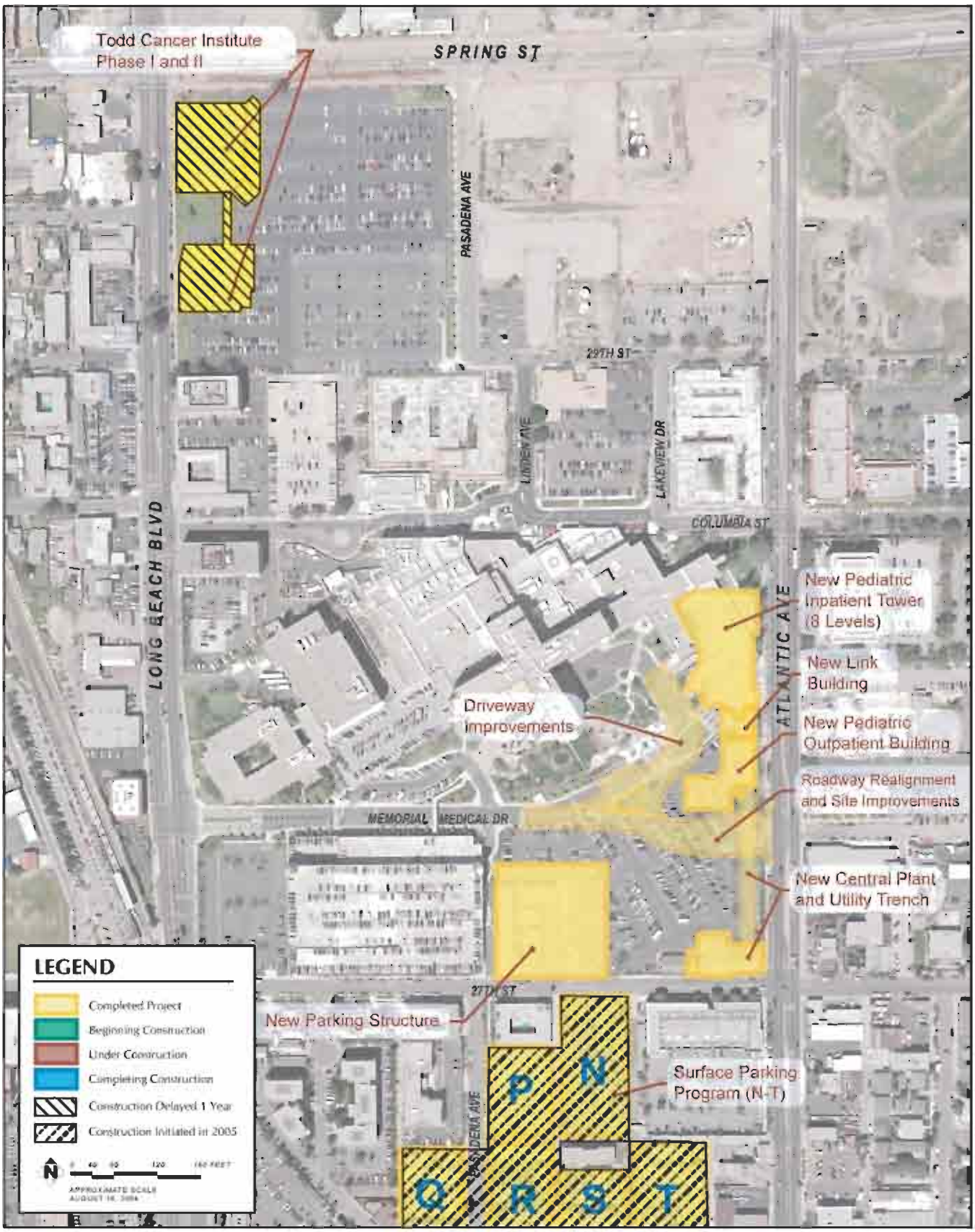

FIGURE 4.2-1
Alternative A Site Plan

- **Objective 7.** Alternative A would provide a pediatric inpatient tower with the required capacity to accommodate the anticipated 1 percent per year increase in demand for newborn intensive care services and general pediatric patients under the age of 15, through year 2020.

- **Objective 8.** Alternative A would allow for consolidation and relocation of the diverse pediatric outpatient services, well care, screening, diagnosis, treatment, and monitoring into a single, dedicated building, the MCH pediatric outpatient building, in close proximity to the MCH.

- **Objective 9.** Alternative A would provide a building designated for mixed uses, the MCH link building, to accommodate retail uses, such as a gift shop, florist, and food and beverage service, to serve MCH employees, patients, and visitors.

- **Objective 10.** Alternative A would provide adequate access and egress to the Campus from Long Beach Boulevard and Atlantic Avenue, through the realignment of Patterson Street.

- **Objective 11.** Alternative A would provide adequate infrastructure to support circulation within the Campus through various improvements to roadways, driveways, sidewalks, security lighting, and landscaping.

- **Objective 12.** Alternative A would provide sufficient parking capacity to comply with the City of Long Beach parking ordinance through use of existing excess parking spaces, development of additional on-site surface parking (Lots N, P, Q, R, S, and T), short-term (10 year) lease of adjacent off-site parking, and construction of a 1,700-car parking structure.

4.2.1 Design, Architecture, and Setting

As with the proposed project, Alternative A would be developed in accordance with the Master Plan and related design guidelines, including standards for landscape, lighting, security, and wayfinding. As with the proposed project, mature trees, pleasant vistas, and the creative use of surface materials would create a sense of wellness and define Campus boundaries and reinforce pedestrian and vehicular entry points. Each building would be designed to reflect its intended use, thus facilitating wayfinding within the 54-acre Campus.

4.2.2 Alternative A Elements

Alternative A would include the same elements as the proposed project, with the same building spaces and characteristics (Table 4.0-1). However, Alternative A would delay the initiation of construction of TCI Phase I until July 2006. Alternative A would also require that the development of on-site parking lots (Lots N, P, Q, R, S, and T) be initiated immediately in July 2005.

4.2.3 Programming

Upon build-out, Alternative A would accommodate the same programming for health care services provided by the proposed project (Table 4.0-1). However, the associated one-year delay in the initiation of construction would delay the benefits intended to be achieved through relocation and consolidation of cancer treatment modalities to a single location:

- Provision of adequate space to serve the approximately 375 patients per day currently seen by the various entities within the TCI
- Provision of a safer and more "user friendly" environment for patients, employees, medical staff, and volunteers
- Accessibility of multiple services at a single location
- Proximity to LBMMC for care required to be provided in an acute care facility
- Operational efficiency
- Quality of care

4.2.4 Economic Characteristics

As with the proposed project, the total estimated construction cost for Alternative A would likely be in excess of $200 million (Table 4.0-3). However, a one-year delay in the initiation of construction of TCI Phase I could increase construction cost by4 to 7 percent, thus requiring identification of additional funds to augment the increased cost of construction or a reduction in the size of the facility to stay within the existing identified construction funds.[4]

4.2.5 Engineering Characteristics

As with the proposed project, Alternative A facilitates year 2008 and year 2030 compliance with the mandates of SB 1953 (Chapter 740, 1994) by relocating health care services from LBMCC and MCH, acute care facilities, to new inpatient and outpatient structures conforming to the requirements of the OSHPD and the City of Long Beach Department of Public Works. This relocation would allow more effective utilization of the two existing acute care facilities within the Campus.

4.2.6 Construction Scenario

The construction scenario for Alternative A would conform to that described for the proposed project for all but two elements: TCI Phase I and development of on-site parking (Lots N, P, Q, R, S, and T). The initiation of construction of TCI Phase I would be delayed by one year, pending development of on-site parking. As such, the development of on-site parking Lots N, P, Q, R, S, and T would be required to be initiated in July 2005, concurrent with mobilization for the MCH pediatric inpatient tower, utility trench, and central plant building.

[4] Davis Langdon Adamson. 2004. "California Construction Industry Market Escalation Report, 2004 Mid-Year Update." Contact: 301 Arizona Avenue, Suite 301, Santa Monica, CA 90401. Available at: http://www.aaaesc.com/_news/2004

4.2.7 Comparative Impacts

Aesthetics

As with the proposed project, Alternative A would not result in significant impacts to aesthetics. Since the project area is not located near a scenic coastal or waterway view or state-designated scenic highway, Alternative A would not impact any viewsheds or scenic highways. Due to the delayed construction for the TCI, short-term impacts from demolition and construction activities would also be delayed. Upon build-out, Alternative A would result in a relative aesthetic improvement in the Central Long Beach Redevelopment Area. These improvements would be consistent with the visual character of the community, and the short-term impacts during construction would be outweighed by the long-term visual enhancement to be derived from the completed project and its provision of visually attractive structural and landscape amenities.

Air Quality

As with the proposed project, Alternative A results in significant impacts to air quality. The one-year delay in construction of TCI Phase I would be concurrent with the later phase of construction of the MCH pediatric inpatient tower. However, it is anticipated that the utility trench and central plant building would be completed prior to the initiation of TCI Phase I. However, development of the six on-site parking areas (Lots N, P, Q, R, S, and T) would need to be undertaken concurrent with the first year of construction for the MCH pediatric inpatient building, utility trench, and central plant building.

As with the proposed project, Alternative A would generate impacts to ambient air quality during construction as a result of trips to and from the site by construction workers, the use of heavy equipment for site grading, demolition of existing structures, soil removal, transport of construction materials for new construction, fuel consumption by on-site construction equipment, application of architectural coatings, and asphalt operation. Alternative A would require more concurrent demolition work and more trucks to transport demolition debris at one time, and greater total land area exposed at one time. As a result, the peak-period emissions would be greater than that of the proposed project and would remain significant for carbon monoxide (CO), nitrogen oxides (NO_x), reactive organic gases (ROGs), and particulate matter less than 10 microns in aerodynamic diameter (PM_{10}).

As with the proposed project, Alternative A would require implementation of mitigation measures Air-1 through Air-13 to minimize to the extent feasible the amount of pollutants emitted by construction activities. As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would reduce significant impacts to air quality from Alternative A related to fugitive dust emissions to below the level of significance. The specified measures would not reduce impacts from peak-day and peak-quarter emissions of CO, NOx, and ROGs to a less than significant level.

As with the proposed project, there would be anticipated impacts to air quality related to odors during construction of Alternative A.

As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would not reduce significant impacts from Alternative A related to the conformance to the current air quality standard to below the level of significance.

As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would not reduce significant impacts from Alternative A related to the cumulatively considerable net increase of any criteria pollutant for which the proposed project region is in nonattainment under an applicable

federal or state ambient air quality standard (including release in emissions that exceed quantitative thresholds for ozone precursor) to below the level of significance.

Cultural Resources

As with the proposed project, Alternative A would require excavation and grading activities that would have the potential to adversely affect paleontological resources, previously unrecorded prehistoric archeological resources, or the unanticipated discovery of human remain, thus requiring the consideration of mitigation measures. As with the proposed project, potential impacts to the cultural resources from the potential to encounter prehistoric and historic archaeological resources and paleontological resources would be reduced to below the level of significance with the incorporation of mitigation measures Cultural-1 through Cultural-3.

Geology and Soils

As with the proposed project, Alternative A would have the potential to expose people and property to the risk of loss or injury involving seismic ground shaking from the operation of the MCH pediatric inpatient tower Phases I and II and the central plant building, MCH pediatric outpatient building, TCI Phases I and II, and the 1,700-space parking structure. All new construction would be designed to the current life safety standard specified in the Uniform Building Code. In addition, the excavation and grading required to construct the TCI Phases I and II, MCH pediatric inpatient tower Phases I and II and the central plant building, MCH pediatric outpatient building, MCH link building, roadway realignment, surface parking lots, and the parking structure would have the potential for impacts related to a substantial increase in soil erosion or loss of topsoil. Erosion potential during construction would be managed to the maximum extent practicable with best management practices (BMPs) as part of compliance with the required NPDES permit and associated Urban Storm Water Management Plan. As with the proposed project, impacts related to geology and soils would be reduced to below the threshold of significance through the incorporation of mitigation measures Geology-1 through Geology-6.

Hazards and Hazardous Materials

As with the proposed project, Alternative A would have the potential to expose people and property to hazards and hazardous materials through construction and operation activities:

- Demolition of buildings with the potential to contain asbestos-containing materials and lead-based paints
- Excavation and transport of petroleum hydrocarbon–contaminated soil and water
- Construction near former oil wells that have not been abandoned to current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
- Placement of structures at locations that have the potential accumulate methane, hydrogen sulfide, or other petroleum-related gases into underground areas or buildings
- Potential to encounter previously unrecorded underground storage tanks during excavation and grading activities

- Routine transport and disposal of construction debris and solid waste that have the potential to contain hazardous waste

- Construction in proximity to areas necessary to emergency response and evacuation plans

- Excavation and grading activities in soils with the potential to contain chemicals of potential concern, including volatile organic compounds

As with the proposed projects, impacts related to hazards and hazardous materials from construction and operation of Alternative A would be expected to be mitigated to below the threshold of significance through the incorporation of mitigation measures Hazards-1 through Hazards-15.

Hydrology and Water Quality

As with the proposed project, Alternative A delays construction of the TCI until adequate on-site or off-site parking is secured. The other five elements of the proposed project would be constructed as planned in the proposed project; thus, Alternative A would result in significant impacts to hydrology and water quality, requiring the consideration of mitigation measures. As with the proposed project, potential impacts to water quality from increased soil erosion, siltation, or increased surface runoff during construction would be expected to be reduced to a less than significant level through conformance with BMPs. The BMPs in the construction scenario were specified to ensure conformance with all applicable federal, state, and local statutes and regulations related to control of surface water and runoff during construction. As with the proposed project, significant impacts related to hydrology and water quality resulting from Alternative A would be mitigated to a less than significant level through the incorporation of mitigation measures Hydro-1 through Hydro-7.

Land Use and Planning

As with the proposed project, Alternative A would not result in significant impacts related to land use and planning. As with the proposed project, the land uses specified in the Master Plan of Land Uses are consistent with LUD No. 7 Mixed-Use District. As with the proposed project, Alternative A would require a change to the existing zoning designation for a portion of land between Spring Street and 29th Street from CHW to PD-29 District, Subarea 1. As with the proposed project, Alternative A would not result in any significant impact to land use and planning.

National Pollution Discharge Elimination System

As with the proposed project, Alternative A would involve concurrent grading and excavation in an area of sufficient size to require compliance with the NPDES permit, thus requiring the development and incorporation of BMPs for reducing discharge of the pollutants into the storm drain and waterway system. As with the proposed project, significant impacts related to NPDES resulting from Alternative A would be mitigated to below the threshold of significance through the incorporation of mitigation measure NPDES-1.

Noise

As with the proposed project, Alternative A would result in significant impacts to ambient noise levels during construction. As with the proposed project, Alternative A requires the use of heavy construction equipment in close proximity to sensitive receptors: pediatric patients in the existing MCH. In addition,

as with the proposed project, Alternative A would generate additional trips to and from the Campus as a result of the increase in the medical staff, employees, patients, and corresponding increase in visitors. As with the proposed project, construction impacts to ambient noise levels would be reduced to the maximum extent practicable through the incorporation of mitigation measures Noise-1 through Noise-3.

Public Services

As with the proposed project, Alternative A would not result in significant impacts related to public services. As with the proposed project, the Alternative A would not require the provision of, or need for, new or physically altered fire protection, police protection, school, or other public facilities that would require physical alteration of the environment. As with the proposed project, Alternative A would be expected to expose people and property to security-related issues and vandalism during the operation of the TCI Phases I and II; MCH pediatric inpatient tower Phases I and II, utility trench, and central plant building; MCH pediatric outpatient building; MCH link building; and surface parking lots, leased off-site parking lots, and parking structure. As with the proposed project, impacts related to security and vandalism from Alternative A would be reduced to below the threshold of significance through mitigation measures Public Services-1 and Public Services-2.

Traffic and Transportation

Future Traffic Operations

Alternative A provides delayed consolidation of outpatient treatment modalities of the TCI until adequate on-site or off-site parking is secured (Figure 4.2-1). This alternative would have traffic and transportation impacts similar to the proposed project because projected construction and mitigation measures are expected to continue once on-site or off-site parking is secured. A Congestion Management Program (CMP) deficiency would not be anticipated with the implementation of the mitigation measures specified for the proposed project. Contributions to intersection loads from construction and operation of Phase I would be delayed by one year. This would reduce the daily two-way project traffic generation forecast from 6,762 to 3,740 daily trips, eliminating the 3,022 daily trips projected from the Phase I construction of TCI. However, these daily trips are expected to be added once Phase I starts. As with the proposed project, impacts to 3 of 10 intersections would not be mitigated to below the level of significance for the year 2008 planning horizon. The impacts to 5 of 10 intersections would not be mitigated to below the level of significance for the year 2014 planning horizon. Potential operations impacts related to traffic and transportation for all other intersections would be expected to be mitigated to below the level of significance through the incorporation of project-specific improvements and mitigation measures Transportation-1 through Transportation-3.

Parking Impacts

As with the proposed project, construction and operation of Alternative A would be expected to result in impacts to parking capacity, thus requiring the consideration of mitigation measures (Table 4.2.7-1, *Alternative A Construction Parking Program*, and Table 4.2.7-2, *Alternative A Operation Parking Program*). Impacts to parking capacity would result from the conversion of 577 existing parking spaces to development and the generation of demand for an additional 1,159 parking spaces through provision of additional inpatient hospital beds and increased total square feet of spaces dedicated to outpatient services and mixed use. As with the proposed project, implementation of mitigation measure Transporation-3 would be expected to reduce impacts on parking to below the threshold of

significance. The parking program specified in measure Transportation-3 would need to be modified in accordance with Table 4.2.7-1 and Table 4.2.7-2.

TABLE 4.2.7-1
ALTERNATIVE A CONSTRUCTION PARKING PROGRAM

	Period	Parking Required	Parking Program
Step A	Roadway realignment: July 2005 to October 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: October 2005 to January 2008	155	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		91
	TCI Phase I: July 2006 to December 2007	306	
	On-site Parking Lot N (121)		30
	On-site Parking Lot P (68)		68
	On-site Parking Lot Q (71)		71
	On-site Parking Lot R (96)		96
	On-site Parking Lot S (72)		41
Step B	MCH pediatric outpatient building: October 2005 to May 2007	43	
	On-site Parking Lot S (72)		31
	On-site Parking Lot T (87)		12
Step C	TCI Phase II: July 2010 to June 2011	275	
	Parking structure at Lot K (1,404)		275
	MCH link building: July 2010 June 2011	0	
Step D	MCH pediatric inpatient tower Phase II: January 2012 to June 2013	20	
	Parking structure at Lot K (1,404)		20

TABLE 4.2.7-2
ALTERNATIVE A OPERATION PARKING PROGRAM

	Period	Parking Required	Parking Program
Step A	Roadway realignment: November 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: January 2008	254	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		121
	On-site Parking Lot P (68)		59
	Central plant building parking (10)		10
	TCI Phase I: January 2008	589	
	On-site Parking Lot P (68)		9
	On-site Parking Lot Q (71)		71
	On-site Parking Lot R (96)		96
	On-site Parking Lot S (72)		72
	On-site Parking Lot T (87)		87
	Off-site Parking Lot L (296)		254
Step B	MCH pediatric outpatient building: June 2007	443	
	Lot L (296)		42
	Lot M (238)		238
	Parking structure at Lot K (1,404)		163
Step C	TCI Phase II: July 2011	280	
	Parking structure at Lot K (1,404)		280
	MCH link building: July 2011	50	
	Parking structure at Lot K (1,404)		50
Step D	MCH pediatric inpatient tower, Phase II: July 2013	184	
	Parking structure at Lot K (1,404)		184

Utilities and Service Systems

As with the proposed project, Alternative A would generate solid waste during construction from the demolition of the WIC Building (4,500 square feet [SF]) and parking structure (50,216 SF) Operation of the capital improvements recommended as elements of the proposed project would increase the generation of solid waste. As with the proposed project, impacts to utilities from solid waste generated during construction and operation of Alternative A would be reduced to below the threshold for significance with the implementation of mitigation measures Utilities-1 and Utilities-4.

4.3 ALTERNATIVE B

Alternative B differs from the proposed project in that Alternative B expedites the commitment to construct an on-site parking structure with a 1,700-car capacity (Figure 4.3-1, *Alternative B Site Plan*). Alternative B would expedite construction of a multilevel parking structure on the Campus capable of accommodating 1,700 car spaces with up to 400 spaces per level and sited in an area designated for interim or permanent use of parking in the Master Plan of Land Uses. The parking structure would provide sufficient parking to accommodate any existing parking spaces displaced by construction and sufficient additional parking to accommodate the parking demand generated by the construction of the proposed project element. The need to initiate construction of the parking structure in year 2005 would increase the cost to provide sufficient parking in the initial phases of construction from $5.94 million (estimated cost to support development of off-site parking lots that would be leased to LBMMC and MCH) to $23.8 million to construct an on-site parking structure (*Table 2.4-1, Estimated Capital Improvement Costs*). The additional $17.86 million required to construct the parking structure would likely be taken from the funds allocated for construction of Phase I of the TCI and Phase I of the MCH pediatric inpatient building, thus reducing the available funds by approximately 14 percent. The reduction in construction funding would likely result in a comparable downsizing of the proposed facilities and their capacity to provide service.

Alternative B meets most of the basic objectives of the proposed project:

- **Objective 1.** Alternative B would allow LBMMC and MCH to continue the legacy of providing a high-quality environment that supports the health and well-being of patrons through the provision of a comprehensive system of programs and facilities that provide prevention, screening, diagnosis, treatment, and monitoring services to meet existing needs. Alternative B would provide additional space to support the 6- to 9-percent population growth in the City of Long Beach expected through year 2020.

- **Objective 2.** Alternative B would provide the combined 500,000 square feet of additional space required to accommodate inpatient, outpatient, and appurtenant facilities required by year 2020.

- **Objective 3.** Alternative B would allow MCH to comply with OSHPD regulations by year 2008.

- **Objective 4.** Alternative B would provide a dedicated facility, in close proximity to the inpatient services provided at the LBMMC, to accommodate the diverse outpatient treatment modalities of the TCI that are currently dispersed in 24 sites on and off the Campus.

- **Objective 5.** Alternative B would provide a dedicated facility, TCI Phase I, for the outpatient well care, screening, imaging, diagnosis, treatment, and monitoring of cancer and non-cancer patients. However, the required downsizing of Phase I to divert funding for construction of the parking structure would allow the facility to accommodate 323 patients rather than the anticipated need for 375 patients to be served per day by year 2007. TCI Phase II would provide sufficient capacity to accommodate approximately 500 patients per day to meet anticipated needs through year 2020.

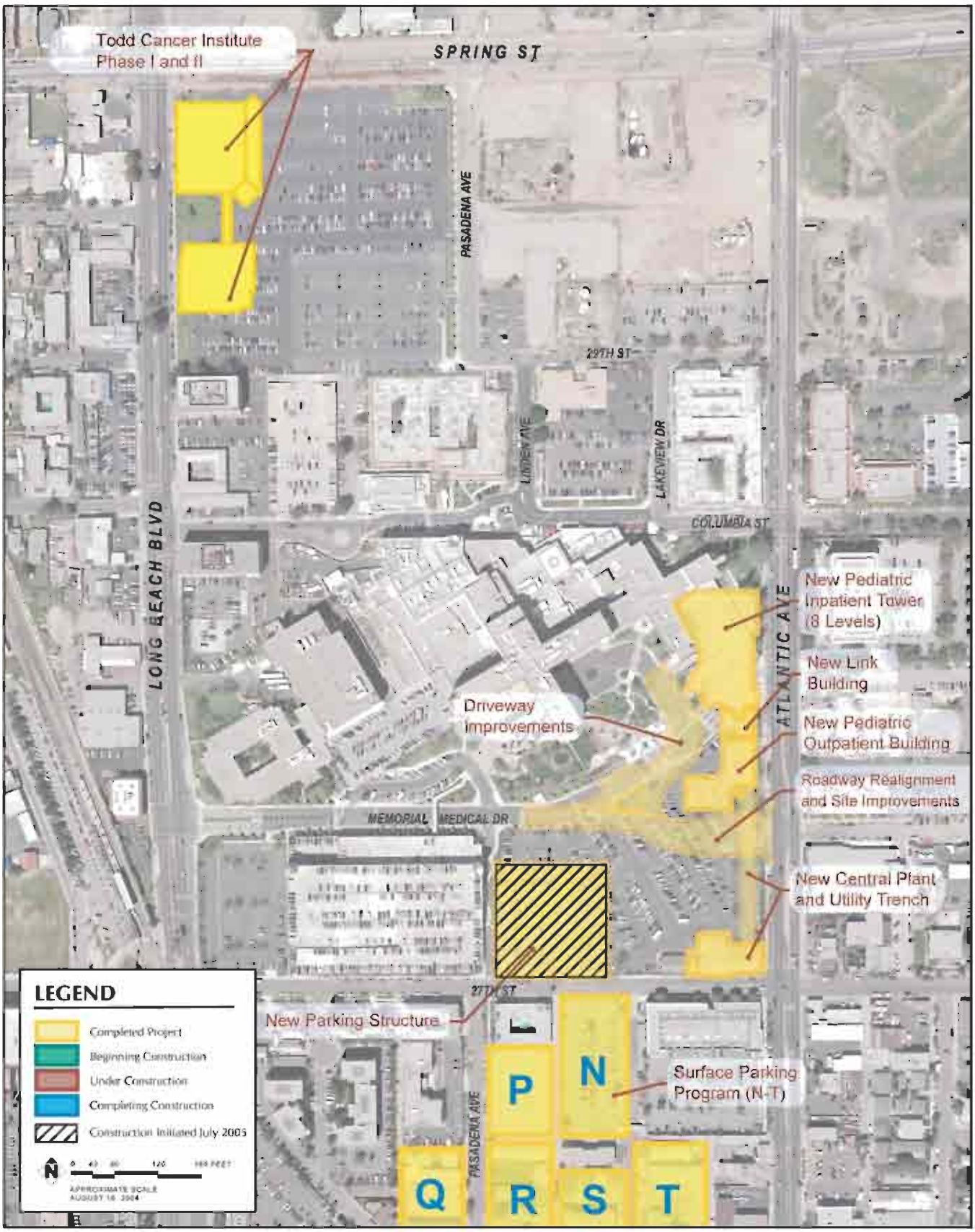

FIGURE 4.3-1
Alternative B Site Plan

- **Objective 6.** Alternative B would provide a pediatric inpatient tower that would increase capacity for pediatric surgical cases. However, the diversion of funds to construct a parking structure would compromise the ability of the MCH pediatric inpatient tower to fully comply with the California Department of Health Services licensing specifications to provide dedicated pediatric operating rooms by January 2008. Construction of the MCH pediatric inpatient tower Phase II would be sufficient to accommodate anticipated demand for services through year 2020.

- **Objective 7.** Alternative B would provide a pediatric inpatient tower with the required capacity to accommodate the anticipated 1 percent per year increase in demand for newborn intensive care services and general pediatric patients under the age of 15, through year 2020.

- **Objective 8.** Alternative B would allow for consolidation and relocation of the diverse pediatric outpatient services, well care, screening, diagnosis, treatment, and monitoring into a single, dedicated building, the MCH pediatric outpatient building, in close proximity to the MCH.

- **Objective 9.** Alternative B would provide a building designated for mixed uses, the MCH link building, to accommodate retail uses, such as a gift shop, florist, and food and beverage service, to serve MCH employees, patients, and visitors.

- **Objective 10.** Alternative B would provide adequate access and egress to the Campus from Long Beach Boulevard and Atlantic Avenue, through the realignment of Patterson Street.

- **Objective 11.** Alternative B would provide adequate infrastructure to support circulation within the Campus through various improvements to roadways, driveways, sidewalks, security lighting, and landscaping.

- **Objective 12.** Alternative B would provide sufficient parking capacity to comply with the City of Long Beach parking ordinance through the use of existing excess parking spaces, development of additional on-site surface parking (Lots N, P, Q, R, S, and T), short-term (10 year) lease of adjacent off-site parking, and construction of a 1,700-car parking structure.

4.3.1 Design, Architecture, and Setting

As with the proposed project, Alternative B would be developed in accordance with the Master Plan and related design guidelines, including standards for landscape, lighting, security, and wayfinding. As with the proposed project, mature trees, pleasant vistas, and the creative use of surface materials would create a sense of wellness and define Campus boundaries and reinforce pedestrian and vehicular entry points. Each building would be designed to reflect its intended use, thus facilitating wayfinding within the 54-acre Campus.

4.3.2 Alternative B Elements

Alternative B would include the same elements as the proposed project, with the same building spaces and characteristics (Table 4.0-1). However, Alternative B would expedite construction of the 1,700-space parking structure to begin in July 2005, thus avoiding the interim use of leased parking in off-site

locations immediately adjacent to the Campus. However, the need to dedicate $23.8 million to the construction of a parking structure at the beginning of the expansion effort would likely reduce the size of Phase I of the TCI and Phase I of the MCH pediatric inpatient tower by 14 percent and increase Phase II of the TCI and Phase II of the MCH pediatric inpatient tower by 14 percent to offset the reduction in space in Phase I.

4.3.3 Programming

Upon build-out, Alternative B would accommodate the same programming for health care services provided by the proposed project (Table 4.0-1). However, the anticipated reduction in the sizing of Phase I facilities for the TCI and MCH pediatric inpatient tower would not delay the accommodation of anticipated demand from year 2008 to year 2013 and the related benefits:

- Provision of a safer and more "user friendly" environment for patients, employees, medical staff, and volunteers
- Accessibility of multiple services at a single location
- Proximity to MCH for care required to be provided in an acute care facility
- Operational efficiency
- Quality of care

4.3.4 Economic Characteristics

As with the proposed project, the total estimated construction cost for Alternative B would likely be in excess of $200 million (Table 4.0-3). The need for immediate construction of parking facility would result in a corresponding reduction of approximately 14 percent of the sizing of Phase I of the TCI and Phase I of the MCH pediatric inpatient tower. The anticipated increase of 4 to 7 percent per year in construction cost would then be expected to result in a corresponding increase of $2.5 to $4.4 million, when applied to the upsizing of Phase II of the TCI and Phase II of the MCH pediatric inpatient tower.[5]

4.3.5 Engineering Characteristics

As with the proposed project, Alternative B facilitates year 2030 compliance with the mandates of SB 1953 (Chapter 740, 1994) by relocating health care services from LBMCC and MCH, acute care facilities, to new inpatient and outpatient structures conforming to the requirements of the OSHPD and the City of Long Beach Department of Public Works. This relocation would allow more effective utilization of the two existing acute care facilities within the Campus. However, the reduction in Phase I of the MCH pediatric inpatient tower may compromise the ability to fully comply with year 2008 licensing requirements of the California Department of Health Services.

4.3.6 Construction Scenario

The construction scenario for Alternative B would conform to that described for the proposed project for all but two elements: parking and the MCH pediatric outpatient building. In this scenario, the

[5] Davis Langdon Adamson. 2004. "California Construction Industry Market Escalation Report, 2004 Mid-Year Update." Contact: 301 Arizona Avenue, Suite 301, Santa Monica, CA 90401. Available at: http://www.aaaesc.com/_news/2004

construction of the 1,700-space parking structure would begin in July 2005, thus eliminating the need for the interim lease of off-site parking. As such, the development of the on-site parking structure would be required to be initiated in July 2005, concurrent with mobilization for the MCH pediatric inpatient tower, utility trench, and central plant building, and TCI Phase I. The capital outlay required to initiate construction of the 1,700-space parking structure would likely require a 14 percent reduction in Phase I of the TCI and Phase I of the MCH inpatient tower. Phase II of the TCI and Phase II of the MCH pediatric inpatient tower would be upsized by 14 percent to compensate for the Phase I reduction.

4.3.7 Comparative Impacts

Aesthetics

As with the proposed project, Alternative B would not result in significant impacts to aesthetics. Since the proposed project area is not located near a scenic coastal or waterway view or state-designated scenic highway, Alternative B would not impact any viewsheds or scenic highways. Upon build-out, Alternative B would result in a relative aesthetic improvement in the Central Long Beach Redevelopment Area. These improvements would be consistent with the visual character of the community, and the short-term impacts during construction would be outweighed by the long-term visual enhancement to be derived from the completed project and its provision of visually attractive structural and landscape amenities.

Air Quality

As with the proposed project, Alternative B results in significant impacts to air quality. Expedited construction of the parking structure would be concurrent with construction of the TCI Phase I and the MCH pediatric inpatient tower, utility trench, and central plant building. As with the proposed project, Alternative B would generate impacts to ambient air quality during construction as a result of trips to and from the site by construction workers, the use of heavy equipment for site grading, demolition of existing structures, soil removal, transport of construction materials for new construction, fuel consumption by on-site construction equipment, application of architectural coatings, and asphalt operation. Alternative B would require more concurrent demolition work and more trucks to transport demolition debris at one time and greater total land area exposed at one time. As a result, the peak-period emissions would be greater than that of the proposed project and would remain significant for CO, NOx, ROGs, and PM_{10}.

As with the proposed project, Alternative B would require implementation of mitigation measures Air-1 through Air-13 to minimize to the maximum extent feasible the amount of pollutants emitted by construction activities. As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would reduce significant impacts to air quality from Alternative B, related to fugitive dust emissions, to below the level of significance. The specified mitigation measures would not reduce impacts from peak-day and peak-quarter emissions of CO, NOx, and ROGs to a less than significant level.

As with the proposed project, there would be anticipated impacts to air quality related to odors during the construction of Alternative B.

As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would not reduce significant impacts from Alternative B, related to the conformance to the current air quality standard, to below the level of significance.

As with the proposed project, implementation of mitigation measures Air-1 through Air-13 would not reduce significant impacts from Alternative B related to the cumulatively considerable net increase of any criteria pollutant for which the proposed project region is in nonattainment under an applicable federal or state ambient air quality standard (including release in emissions that exceed quantitative thresholds for ozone precursor) to below the level of significance.

Cultural Resources

As with the proposed project, Alternative B would require excavation and grading activities that would have the potential to adversely affect paleontological resources, previously unrecorded prehistoric archeological resources, or the unanticipated discovery of human remain, thus requiring the consideration of mitigation measures. As with the proposed project, potential impacts to the cultural resources from the potential to encounter prehistoric and historic archaeological resources and paleontological resources would be reduced to below the level of significance with the incorporation of mitigation measures Cultural-1 through Cultural-3.

Geology and Soils

As with the proposed project, Alternative B would have the potential to expose people and property to the risk of loss or injury involving seismic ground shaking from the operation of the MCH pediatric inpatient tower Phases I and II and the central plant building, MCH pediatric outpatient building, TCI Phases I and II, and the 1,700-space parking structure. All new construction would be designed to the current life safety standard specified in the Uniform Building Code. In addition, the excavation and grading required to construct the TCI Phases I and II, MCH pediatric inpatient tower Phases I and II and central plant building, MCH pediatric outpatient building, MCH link building, roadway realignment, surface parking lots, and the parking structure would have the potential for impacts related to a substantial increase in soil erosion or loss of topsoil. Erosion potential during construction would be managed to the maximum extent practicable with BMPs as part of compliance with the required NPDES permit and associated Urban Storm Water Management Plan.

As with the proposed project, impacts related to geology and soils would be reduced to below the threshold of significance through the incorporation of mitigation measures Geology-1 through Geology-6.

Hazards and Hazardous Materials

As with the proposed project, Alternative B would have the potential to expose people and property to hazards and hazardous materials through construction and operation activities:

- Demolition of buildings with the potential to contain asbestos-containing materials and lead-based paints
- Excavation and transport of petroleum hydrocarbon–contaminated soil and water
- Construction near former oil wells that have not been abandoned to current standards of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources

- Placement of structures at locations that have the potential accumulate methane, hydrogen sulfide, or other petroleum-related gases into underground areas or buildings

- Potential to encounter previously unrecorded underground storage tanks during excavation and grading activities

- Routine transport and disposal of construction debris and solid waste that have the potential to contain hazardous waste

- Construction in proximity to areas necessary to emergency response and evacuation plans

- Excavation and grading activities in soils with the potential to contain chemicals of potential concern, including volatile organic compounds

As with the proposed projects, impacts related to hazards and hazardous materials from construction and operation of Alternative B would be expected to be mitigated to below the threshold of significance through the incorporation of mitigation measures Hazards-1 through Hazards-15.

Hydrology and Water Quality

As with the proposed project, Alternative B would result in significant impacts to hydrology and water quality, requiring the consideration of mitigation measures. As with the proposed project, potential impacts to the water quality from increased soil erosion, siltation, or increased surface runoff during construction would be expected to be reduced to a less than significant level through conformance with BMPs. The BMPs specified in the construction scenario were specified to ensure conformance with all applicable federal, state, and local statutes and regulations related to control of surface water and runoff during construction. As with the proposed project, significant impacts related to hydrology and water quality resulting from Alternative B would be mitigated to below the level of significance through the incorporation of mitigation measures Hydro-1 through Hydro-7.

Land Use and Planning

As with the proposed project, Alternative B would not result in significant impacts related to land use and planning. As with the proposed project, the land uses specified in the Master Plan of Land Uses are consistent with LUD No. 7 Mixed-Use District. As with the proposed project, Alternative B would require a change to the existing zoning designation for a portion of land between Spring Street and 29th Street from CHW to PD-29 District, Subarea 1. As with the proposed project, Alternative B would not result in any significant impact to land use and planning.

National Pollution Discharge Elimination System

As with the proposed project, Alternative B would involve concurrent grading and excavation in an area of sufficient size to require compliance with the NPDES permit, thus requiring the development and incorporation of BMPs for reducing discharge of the pollutants into the storm drain and waterway system. As with the proposed project, significant impacts related to NPDES resulting from Alternative B would be mitigated to below the threshold for significance through the incorporation of mitigation measure NPDES-1.

Noise

As with the proposed project, Alternative B would result in significant impacts to ambient noise levels during construction. As with the proposed project, Alternative B requires the use of heavy construction equipment in close proximity to sensitive receptors: pediatric patients in the existing MCH. In addition, as with the proposed project, Alternative B would generate additional trips to and from the Campus as a result of the increase in the medical staff, employees, patients, and corresponding increase in visitors. As with the proposed project, construction impacts to ambient noise levels would be reduced to the maximum extent practicable through the incorporation of mitigation measures Noise-1 through Noise-3.

Public Services

As with the proposed project, Alternative B would not result in significant impacts related to public services. As with the proposed project, Alternative B would not require the provision of, or need for, new or physically altered fire protection, police protection, school, or other public facilities that would require physical alteration of the environment. As with the proposed project, Alternative B would be expected to expose people and property to security-related issues and vandalism during the operation of the TCI Phases I and II; MCH pediatric inpatient tower Phases I and II, utility trench, and central plant building; MCH pediatric outpatient building; MCH link building; surface parking lots; and parking structure. As with the proposed project, impacts related to security and vandalism from Alternative B would be reduced to below the threshold for significance through mitigation measures Public Services-1 and Public Services-2.

Traffic and Transportation

Future Traffic Operations

Alternative B would expedite construction of the parking structure concurrent with construction of the MCH pediatric inpatient tower Phase I, utility trench, and central plant building (Figure 4.3-1), thus creating significant impacts to local intersections during peak hours when considered in conjunction with ambient growth, related projects, and Alternative B construction- and operation-generated trips. As with the proposed project, Alternative B would require implementation of the same mitigation measures because it takes into account increased traffic due to construction activities and additional parking provided by the expedited parking structure. A CMP deficiency would not be anticipated with implementation of the mitigation measures specified for the proposed project. As with the proposed project, impacts to 3 of 10 intersections would not be mitigated to below the level of significance for the year 2008 planning horizon. The impacts to 5 of 10 intersections would not be mitigated to below the level of significance for the year 2014 planning horizon. Potential operations impacts related to traffic and transportation for all other intersections would be expected to be mitigated to below the level of significance through the incorporation of project-specific improvements and mitigation measures Transportation-1 through Transportation-3.

Parking Impacts

As with the proposed project, construction and operation of Alternative B would be expected to result in impacts to parking capacity, thus requiring the consideration of mitigation measures (Table 4.3.7-1 *Alternative B Construction Parking Program*, and Table 4.3.7-2, *Alternative B Operation Parking Program*). Impacts to parking capacity would result from the conversion of 577 existing parking spaces to development and the generation of demand for an additional 1,159 parking spaces through

provision of additional inpatient hospital beds and increased total square feet of spaces dedicated to outpatient services and mixed use. As with the proposed project, implementation of mitigation measure Transporation-3 would be expected to reduce impacts on parking to below the threshold of significance. The parking program specified in mitigation measure Transporation-3 would need to be modified in accordance with Tables 4.3.7-1 and 4.3.7-2.

TABLE 4.3.7-1
ALTERNATIVE B CONSTRUCTION PARKING PROGRAM

	Period	Parking Required	Parking Program
Step A	Roadway realignment: July 2005 to October 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: October 2005 to January 2008	155	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		91
	TCI Phase I: July 2006 to December 2007	306	
	On-site Parking Lot N (121)		30
	On-site Parking Lot P (68)		68
	On-site Parking Lot Q (71)		71
	On-site Parking Lot R (96)		96
	On-site Parking Lot S (72)		41
Step B	MCH pediatric outpatient building: October 2005 to May 2007	43	
	On-site Parking Lot S (72)		31
	On-site Parking Lot T (87)		12
Step C	TCI Phase II: July 2010 to June 2011	275	
	Parking structure at Lot K (1,404)		275
	MCH link building: July 2010 June 2011	0	
Step D	MCH pediatric inpatient tower Phase II: January 2012 to June 2013	20	
	Parking structure at Lot K (1,404)		20

TABLE 4.3.7-2
ALTERNATIVE B OPERATION PARKING PROGRAM

	Period	Parking Required	Parking Program
Step A	Roadway realignment: November 2005	195	
	Existing available capacity (259)		195
	MCH pediatric inpatient tower Phase I, central plant building, and utility trench: January 2008	234	
	Existing available capacity (259)		64
	On-site Parking Lot N (121)		121
	On-site Parking Lot P (68)		39
	Central plant building parking (10)		10
	TCI Phase I: January 2008	531	
	On-site Parking Lot P (68)		29
	On-site Parking Lot Q (71)		71
	On-site Parking Lot R (96)		96
	On-site Parking Lot S (72)		72
	On-site Parking Lot T (87)		87
	Parking structure at Lot K (1,404)		176
Step B	MCH pediatric outpatient building: June 2007	443	
	Parking structure at Lot K (1,404)		443
Step C	TCI Phase II: July 2011	338	
	Parking structure at Lot K (1,404)		338
	MCH link building: July 2011	50	
	Parking structure at Lot K (1,404)		50
Step D	MCH pediatric inpatient tower Phase II: July 2013	204	
	Parking structure at Lot K (1,404)		204

Utilities and Service Systems

As with the proposed project, Alternative B would generate solid waste during construction from the demolition of the WIC Building (4,500 SF) and parking structure (50,216 SF). Operation of the capital improvements recommended as elements of the proposed project would increase the generation of solid waste. As with the proposed project, impacts to utilities from solid waste generated during construction and operation of Alternative B would be reduced to below the threshold of significance with the implementation of mitigation measures Utilities-1 and Utilities-4.

SECTION 5.0
SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This section of the Environmental Impact Report (EIR) summarizes an analysis of the potential for implementation of the Long Beach Memorial Medical Center Expansion (proposed project) to result in significant environmental effects that cannot be reduced to below the level of significance. The analysis of the potential for the proposed Master Plan of Land Uses and construction, operation, and maintenance of the capital improvements recommended as elements of the proposed project to result in direct, indirect, and cumulative significant impacts on the environment is presented in Section 3 of this EIR.

Consistent with the requirements of Section 15126.2(b) of the State of California Environmental Quality Act (CEQA) Guidelines, any significant impacts, including those that can be mitigated but not reduced to below the level of significance, are described in this section of the EIR. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, are also described.

This EIR concludes that the proposed project has the potential to result in unavoidable significant environmental effects related to air quality and traffic and transportation during construction. Although mitigation measures have been identified to avoid and minimize operational impacts to traffic and circulation to intersections in the vicinity of the Long Beach Memorial Medical Center campus (Campus), impacts to some intersections would remain significant. The analysis contained in this EIR demonstrates that the proposed project would not be expected to result in unavoidable significant environmental effects related to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, National Pollution Discharge Elimination System (NPDES), public services, or utilities and service systems.

AESTHETICS

Implementation of the proposed project would have a potentially significant impact on daytime and nighttime views in the area due to the introduction of a new source of substantial light or glare from the construction of large, multistoried structures with reflective exterior surfaces. In addition, the security lighting around the facility would have the potential to create an aesthetic impact. The potential impacts from daytime and nighttime light and glare on aesthetics would be mitigated to below the level of significance through the incorporation of mitigation measures Aesthetics-1 and Aesthetics-2.

AIR QUALITY

Operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to air quality. However, temporary impacts to air quality during construction, including airborne dust from grading, demolition, and dirt hauling; and gaseous emissions from heavy equipment, delivery and dirt-hauling trucks, employee vehicles, and paints and coatings would result in impacts to air quality from emissions of carbon monoxide (CO), nitrogen oxides (NO_x), and reactive organic gases (ROGs). Implementation of mitigation measures Air-1 through Air-13 would reduce impacts to air quality from construction and operation of the proposed project to the maximum extent feasible, in accordance with the guidance provided by the South Coast Air

Quality Management District. However, impacts to air quality from construction emissions of NO_x would remain significant.

CULTURAL RESOURCES

The proposed project has the potential to result in significant impacts to cultural resources related to ground-disturbing activities in a geologic unit known to have a moderate-to-high probability to contain unique paleontological resources and related directly or indirectly to the destruction of a unique archaeological resource, therefore requiring the consideration of mitigation measures. In addition, the proposed project may result in the unanticipated discovery of human remains buried outside of formal cemeteries or Native American sacred sites. These potential impacts related to cultural resources would be mitigated to below the level of significance through the incorporation of mitigation measures Cultural-1 through Cultural-3.

GEOLOGY AND SOILS

Operation and construction of the proposed project would result in the potential for significant environmental effects related to geology and soils from the exposures of people and property to risk in the event of seismic ground shaking. All new construction would be designed to the current life safety standard specified by the Uniform Building Code and the Office of Statewide Health Planning and Development; therefore, risks related to seismic hazards would be reduced to the maximum extent practicable.

The proposed project would be expected to result in less than significant impacts related to a substantial increase in soil erosion or loss of topsoil. Erosion potential during construction would be managed to the maximum extent practicable with best management practices (BMPs) as part of compliance with the required NPDES permit and associated Urban Storm Water Management Plan.

Impacts related to geology and soils would be reduced to below the level of significance through the incorporation of mitigation measures Geology-1 and Geology-6.

HAZARDS AND HAZARDOUS MATERIALS

Operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to hazards and hazardous materials. The proposed project has the potential to release hazardous materials during the demolition and construction phase of the proposed project related to the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions. In addition, elements of the proposed project are located over contaminated soils and a buried landfill. The potential impacts related to the potential to encounter hazards and hazardous materials during construction would be mitigated to below the level of significance through incorporation of mitigation measures Hazards-1 through Hazards-15.

HYDROLOGY AND WATER QUALITY

Operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to hydrology and water quality. Construction of the proposed project would require grading that would have the potential to violate water quality standards. Direct impacts would result from the degradation of surface water quality within the proposed project area, and indirect impacts would result from the influence of polluted storm water runoff flowing off site. These potential impacts related to hydrology and water quality would be mitigated to below the level of significance through incorporation of mitigation measures Hydro-1 through Hydro-7.

LAND USE AND PLANNING

There would be no anticipated significant impacts to land use and planning as a result of the proposed project. The land use and planning analysis undertaken for this proposed project determined that no significant impacts to land use and planning would arise from the proposed project.

NPDES

Implementation of the proposed project would not be expected to result in significant unavoidable environmental effects related to NPDES. The total area affected by grading required to construct the elements of the proposed project makes it subject to NPDES; therefore, the proposed project is required to prepare a Standard Urban Storm Water Mitigation Plan consistent with the requirements of State of California Regional Water Quality Control Board, Los Angeles Region, Resolution No. R-00-02. This EIR has identified feasible BMPs for reducing discharge of the pollutants into the storm drain and waterway system. Implementation of mitigation measure NPDES-1 would reduce impacts to NPDES to below the level of significance.

NOISE

Operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to noise. The proposed project has the potential to impact ambient noise levels during construction. The construction of the central plant building would have an impact on ambient noise levels during the excavation and the finishing phases of the proposed project. A noise reduction of 4 dB during construction would be required to reduce impacts to below the level of significance. The construction of the Miller Children's Hospital pediatric inpatient tower Phase I has the potential to result in significant impacts to ambient noise levels to sensitive receptors in the existing Miller Children's Hospital, particularly during demolition of the parking structure. Noise reduction of 1 to 11 dB would be required to reduce impacts to below the level of significance. The incorporation of mitigation measures Noise-1 through Noise-3 would be expected to reduce impacts to the ambient noise environment to the maximum extent practicable.

PUBLIC SERVICES

Operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to public services. The public services analysis undertaken for this proposed project determined that no significant public services impacts would arise from the proposed project. However, exposure of people or property to security-related issues and vandalism and of people to safety hazards from the operation of the Miller Children's Hospital pediatric inpatient tower Phases I and II, central plant building, outpatient building, and link building; the Todd Cancer Institute Phases I and II; and all new parking facilities within the Campus would be minimized through amendments of the existing security plan and the existing lighting plan prior to the operation of each proposed project element. These potential impacts would be mitigated to below the level of significance through the incorporation of mitigation measures Public Services-1 and Public Services-2.

TRAFFIC AND TRANSPORTATION

Construction of the proposed project would be expected to result in significant unavoidable environmental effects related to traffic and transportation. These impacts occur where no physical mitigation measure was feasible because the additional turn lanes needed would require widening and additional right-of-way. These impacts include 3 of the 28 intersections analyzed: Atlantic Avenue/Willow Street, Long Beach Boulevard/Willow Street, and Long Beach Boulevard/Wardlow Road. Operation of the structural elements of the proposed project would reduce the level of service at nine intersections by year 2008. The level of service at two additional intersections, Atlantic Avenue/Wardlow Road and I-405 SB Ramps/Crest Drive, would be further reduced by the proposed project in year 2014. The impacts to 3 of 10 intersections would not be mitigated to below the level of significance for the year 2008 planning horizon. The impacts to 5 of 10 intersections would not be mitigated to below the level of significance for the year 2014 planning horizon. In addition, the proposed project creates a total demand for 1,404 parking spaces. Potential operation impacts related to traffic and transportation for all other intersections would be expected to be mitigated to below the level of significance through the incorporation of project-specific improvements and mitigation measures Transportation-1 though Transportation-3.

UTILITIES AND SERVICE SYSTEMS

Construction and operation of the proposed project would not be expected to result in significant unavoidable environmental effects related to utilities and service systems. The proposed project has the potential to impact solid waste disposal due to solid waste generated from building debris during demolition and construction. Operation of the capital improvements recommended as elements of the proposed project would be expected to increase the solid waste generated on the Campus. These potential impacts related to solid waste would be mitigated to below the level of significance through the incorporation of mitigation measures Utilities-1 and Utilities-4.

SECTION 6.0
SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES RELATED TO IMPLEMENTATION OF THE PROPOSED PROJECT

This section of the Environmental Impact Report (EIR) summarizes an analysis of the potential for implementation of the Long Beach Memorial Medical Center Expansion (proposed project) to result in significant irreversible environmental changes. Such a change refers to an irretrievable commitment of nonrenewable resources, or other environmental changes that commit future generations to similar uses. Irreversible environmental changes can also result from potential accidents associated with the proposed project.

The proposed project consists of redevelopment of existing developed areas for medical uses within a medical campus that is currently dedicated to such uses. Although the Long Beach Memorial Medical Center (LBMMC) has requested a modification to the existing zoning boundaries in the northeastern area of the LBMMC campus, the anticipated uses are consistent with the existing land use designation in the City of Long Beach General Plan and the zoning designations. The analysis provided in Section 3, Existing Conditions, Impacts, Mitigation, and Level of Significance after Mitigation, demonstrates that the unavoidable significant impacts regarding air quality and traffic and transportation would not be reduced to below the level of significance. There would be anticipated significant irreversible environmental changes related to air quality and traffic and transportation as a result of implementation of the proposed project.

SECTION 7.0
GROWTH-INDUCING IMPACTS

This section of the Environmental Impact Report (EIR) analyzes the potential for the proposed Long Beach Memorial Medical Center Expansion (proposed project) to result in growth-inducing impacts. Such impacts normally occur when a proposed project fosters economic or population growth, or when there is construction of additional housing, either directly or indirectly, within the surrounding environment. The types of projects that are normally considered to result in growth-inducing impacts are those that provide infrastructure that would be suitable to support additional growth or remove an existing barrier to growth.

The proposed project would serve as a high-quality medical facility to meet the existing and anticipated needs of the Long Beach community for health care services through the year 2015. The goal of the proposed project is to improve the health and well-being of individuals, families, and communities of the City of Long Beach through innovation and the pursuit of excellence and to make the Long Beach Memorial Medical Center (LBMMC) into Southern California's preferred, operationally excellent, fiscally sound provider of comprehensive, high-quality health services.

There is a sufficient construction work force in the City of Long Beach area to provide the labor for the proposed project. Construction employment accounts for 137,900 jobs in the Los Angeles–Long Beach Metropolitan Statistical Area as of October 2004.[1] Construction employment increased 2.5 percent in year 2004 and would be expected to continue to increase.[2] Thus, construction employment required for the proposed project constitutes less than 1 percent of the available labor pool. For the Todd Cancer Institute (TCI) Phase I, approximately 90 workers would be expected to be on site during peak construction activity, and fewer than 90 workers would be expected on site during non-peak construction activity. For the TCI Phase II, approximately 55 workers would be expected to be on site during peak construction activity, and fewer than 55 workers would be expected on site during non-peak construction activity. For the Miller Children's Hospital (MCH) pediatric inpatient tower Phase I, approximately 144 workers would be expected to be on site during peak construction, and fewer than 140 workers would be expected on site during non-peak construction activity. For the MCH pediatric inpatient tower Phase II, approximately 85 workers would be expected to be on site during peak construction activity, and fewer than 85 workers would be expected on site during non-peak construction activity. For the MCH utility trench, approximately 20 workers would be expected to be on site during peak construction activity, and fewer than 20 workers would be expected on site during non-peak construction activity. For the MCH central plant building, approximately 50 workers would be expected to be on site during peak construction activity, and fewer than 50 workers would be expected on site during non-peak construction activity. For the MCH pediatric outpatient building, approximately 144 workers would be expected to be on site during peak construction activity, and fewer than 140 workers would be expected on site during non-peak construction activity. For the MCH link building, approximately 55 workers would be expected to be on site during peak construction activity, and fewer than 55 workers would be expected on site during non-peak construction activity. For the roadway realignment, approximately 50 workers would be expected to be on site during peak construction activity, and fewer than 50 workers would be expected on site during non-peak construction activity. For parking program, approximately 50 workers would be expected to be on site during peak construction activity, and fewer than 50 workers would be expected on site during non-

[1] State of California, Employment Development Department. 15 November 2004. Labor Market Information. Available at: http://www.calmis.ca.gov

[2] State of California, Employment Development Department. 15 November 2004. Labor Market Information. Available at: http://www.calmis.ca.gov

peak construction activity. Therefore, the temporary employment opportunities generated by the proposed project would not be considered to be growth-inducing.

The increase in medical staff and employees required to operate the proposed project would be consistent with the projected population growth. The Southern California Association of Governments[3] and the Housing element of the City of Long Beach General Plan[4] forecast a 6- to 9-percent growth rate to the year 2020, adding approximately 65,000 people to the City of Long Beach. The total number of existing jobs provided by LBMMC is 6,358. The proposed expansion of the LBMMC would generate approximately 500 to 630 potential permanent new jobs after the completion of construction for the maintenance and operation of both inpatient and outpatient health facilities, maintenance activities, security, childcare services, retail, and emergency activities. This employment number includes 122 existing employees of the TCI who work in dispersed locations throughout the LBMMC campus that would be consolidated into a single location as a result of the proposed project. Therefore, the net increase in employment would be 378 to 498, or a 6- to 8-percent increase, which is consistent with the growth rate specified by the General Plan. The operations labor force would be recruited from the existing population in the City of Long Beach area and, therefore, is not considered to be growth-inducing for the proposed project.

The proposed project would not include the construction of housing either directly or indirectly in the surrounding environment. The employment opportunities generated by the proposed project are minimal and do not exceed the projected growth stipulated in the Southern California Association of Governments 2004 Regional Transportation Plan.[5] The existing utilities and service systems currently in operation, such as the wastewater treatment, storm drain system, and water supply and solid waste systems, have the capacity to meet the future growth anticipated in the area of the proposed project. The existing public services, such as fire protection, police protection, parks, and other public services (e.g., libraries), would not be significantly impacted by the proposed project and have the capacity to meet future anticipated growth in the area of the proposed project. Because the proposed project does not include constructing housing on the proposed project site, no impact to schools is anticipated; therefore, it is not considered to be subject to growth-inducing impacts from the proposed project.

[3] Southern California Association of Governments. January 1995. *Regional Comprehensive Plan and Guide*. Contact: 818 West Seventh Street, 12th Floor, Los Angeles, CA 90017.

[4] City of Long Beach, Department of Planning and Building. April 2001. *Housing Element (2000–2005) of the Long Beach General Plan*. Prepared by: Cotton/Bridges/Associates. Contact: City of Long Beach, Department of Planning and Building, City Hall, 333 West Ocean Boulevard, Long Beach, CA 90802.

[5] Southern California Association of Governments. 2004. *2004 Regional Transportation Plan*. Contact: 818 West Seventh Street, 12th Floor, Los Angeles, CA 90017. Available at: http://www.scag.ca.gov/rtp2001/2004draft/FinalPlan.htm

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SECTION 10.0
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SECTION 11.0
DISTRIBUTION LIST

This section of the Environmental Impact Report (EIR) contains a list of those entities to which a copy of the Notice of Availability (NOA) of this EIR or a copy of the EIR has been distributed. Organizations or individuals listed below with a superscript [(EIR)] received a hard copy of Volume I of the EIR. Organizations or individuals listed below with a superscript [(EIR+)] received a hard copy of Volume I and Volume II, Technical Appendices, of the EIR. Organizations or individuals listed below with a superscript [(EIR/CD)] received a hard copy of Volume I of the EIR and an electronic copy (CD) of Volume II, Technical Appendices. Organizations or individuals listed below with a superscript [(CD+)] received an electronic copy (CD) of Volume I and Volume II, Technical Appendices, of the EIR. Organizations or individuals listed below without any superscripted notation received a copy of the NOA only.

Copies of the EIR are available during the 45-day public review period, from January 25, 2005, to March 10, 2005, at three libraries:

Long Beach Main Public Library [EIR+]
101 Pacific Avenue, Long Beach, CA 90022
Telephone Number: (562) 570-7500

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560 East Hill Street, Long Beach, CA 90806
Telephone Number: (562) 570-1041

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3680 Atlantic Avenue, Long Beach, CA 90807
Telephone Number: (562) 570-1042

The Draft EIR is also available for review at the City of Long Beach:

City of Long Beach Department of Planning and Building [EIR+]
333 West Ocean Boulevard, Long Beach, CA 90802
Telephone Number: (562) 570-6193

11.1 PUBLIC AGENCIES

11.1.1 Federal Agencies

Federal Aviation Administration (FAA) [EIR/CD]
William C. Withycombe
Regional Administrator
15000 Aviation Boulevard
Hawthorne, CA 90250
Tel: (310) 725-3550

11.1.2 State Agencies

Governor's Office of Planning and Research
State Clearinghouse CD+ (15), EIR Executive Summaries only (15)
Ms. Terry Roberts
P.O. Box 3044
Sacramento, CA 95812-3044
Tel: (916) 445-0613

California Native American
Heritage Commission EIR+
Mr. Robert Wood
915 Capitol Mall, Suite 364
Sacramento, CA 95814
Tel: (916) 653-4082

California Department of Transportation EIR/CD
Division of Aeronautics
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Caltrans (District 7) EIR+
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Los Angeles, CA 90012
Tel: (213) 897-4429

California Coastal Commission CD+
Chuck Damm, Sr.
Deputy Director
200 Oceangate, 10th Floor
Long Beach, CA 90802
Tel: (562) 590-5071
Fax: (562) 590-5084

California Regional Water Quality Control Board,
Los Angeles Region (Region 4) EIR+
Mr. David Bacharowski
320 West Fourth Street, Suite 200
Los Angeles, CA 90013
Tel: (213) 576-6600

California Environmental Protection Agency,
Department of Toxic Substances Control EIR+
Ms. Gloria Conti
5796 Corporate Avenue
Cypress, CA 90630-4732
Tel: (714) 484-5300
Fax: (714) 484-5302

California Integrated Waste
Management Board EIR/CD
Ms. Peggy Farrell
1001 I Street
Sacramento, CA 95814
Tel: (916) 341-6000

California Department of Parks and Recreation
Office of Historic Preservation CD+
Mr. Wayne Donaldson
State Historic Preservation Officer
P.O. Box 94296
Sacramento, CA 94296
Tel: (916) 653-6624

Office of Statewide Health, Planning, and
Development EIR+
Mr. Ted Teshima
Senior Architect
311 South Spring Street, 10th Floor
Los Angeles, CA 90013-4413
Tel: (213) 897-0177

11.1.3 Regional Agencies

South Coast Air Quality Management District [EIR+]
Dr. Barry R. Wallerstein
21865 East Copley Drive
Diamond Bar, CA 91765-4182
Tel: (909) 396-2000

Southern California Association of Governments [EIR+]
Mr. Mark A. Pisano
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017
Tel: (213) 236-1800

County of Los Angeles Department of Public Works [CD+]
Land Development Division
Ms. Suk Chong
P.O. Box 1460
Alhambra, CA 91802-1460
Tel: (626) 458-5100

Greater Los Angeles County Vector Control District [CD+]
Mr. Jack Hazelrigg
12545 Florence Avenue
Santa Fe Springs, CA 90670
Tel: (562) 944-9656

Los Angeles County Consolidated [CD+]
Protection District
Mr. P. Michael Freeman
1320 North Eastern Avenue
Los Angeles, CA 90063
Tel: (323) 881-2401

Los Angeles County Tax Assessor [CD+]
Mr. Rick Auerbach
1401 East Willow Street
Signal Hill, CA 90755
Tel: (562) 256-1701

Office of the County Clerk—Environmental Filings [EIR+]
Ms. Conny B. McCormack
12400 East Imperial Highway
Second Floor, Room 2001
Norwalk, CA 90650
Tel: (562) 462-2060

County of Los Angeles Fire Department [CD+]
Ms. Lily Cusick
5823 Rickenbacher Road
Forestry Division, Room 123
Commerce, CA 90040
Tel: (323) 890-4330

County Sanitation Districts of Los Angeles County [CD+]
Mr. James Stahl
1955 Workman Mill Road
Whittier, CA 90607
Tel: (562) 699-7411

County Sanitation Districts of Los Angeles County [EIR/CD]
Ms. Suzanne Wienke
Supervising Civil Engineer
1955 Workman Mill Road
Whittier, CA 90607
Tel: (562) 699-7411

County of Los Angeles Metropolitan Transportation Authority [CD+]
Mr. Art Cuerto
1 Gateway Plaza
Mail Stop 99-22-29
Los Angeles, CA 90012-2952
Tel: (213) 922-2000

County of Los Angeles Department of Health Services [EIR+]
Mr. Pete Oda
1449 West Temple Street, Room 202
Los Angeles, CA 90026
Tel: (626) 430-5540

11.1.4 Local Agencies

Long Beach Transit [EIR/CD]
Mr. John Carlson
1300 Gardenia Avenue
Long Beach, CA 90813
Tel: (562) 591-2301

Long Beach Community College District
Dr. E. Jan Kehoe
President
4901 East Carson Street
Long Beach, CA 90808
Tel: (562) 938-4121

Long Beach Unified School District
Mr. Christopher Steinhauser
Superintendent
1515 Hughes Way
Long Beach, CA 90810
Tel: (562) 997-8000

Compton Community College
Mr. Ulis Williams
1111 East Artesia Boulevard
Compton, CA 90021
Tel: (310) 900-1600

Environmental & Project Planning
Services Division
Mr. George Britton
Manager
P.O. Box 4048
Santa Ana, CA 92702-4048
Tel: (714) 834-5312

Board of Directors Water Replenishment District
of Southern California
Mr. Norm Ryan
12621 East 166th Street
Cerritos, CA 90703
Tel: (562) 921-5521

Compton Creek Mosquito Abatement District
Mr. Mitchel R. Weinbaum
District Manager
1224 South Santa Fe Avenue
Compton, CA 90021-4339
Tel: (310) 639-7375

Paramount Unified School District
Mr. Jay Wilbur
Superintendent
15110 South California Avenue
Paramount, CA 90723
Tel: (562) 602-6011

Compton Unified School District
Dr. Jessie L. Gonzales
Superintendent
604 South Tamarind Avenue
Compton, CA 90020
Tel: (310) 639-4321

ABC Unified School District
Dr. Ron Barnes
16700 Norwalk Boulevard
Cerritos, CA 90701
Tel: (562) 926-5566

11.1.5 City of Long Beach

City of Long Beach Fire Department [EIR/CD]
Chief Terry L. Harbour
925 Harbor Plaza Drive
Long Beach, CA 90802
Tel: (562) 570-2500

City of Long Beach Police Department [EIR/CD]
Chief Anthony W. Batts
100 Long Beach Boulevard
Long Beach, CA 90802
Tel: (562) 570-7301

City of Long Beach [CD+]
Redevelopment
Ms. Barbara Kaiser
333 West Ocean Boulevard, 3rd Floor
Long Beach, CA 90802
Tel: (562) 570-6615

Long Beach Airport Bureau [CD+]
Mr. Chris Kunze
Airport Manager
4100 Donald Douglas Drive
Long Beach, CA 90808-1798
Tel: (562) 570-2619

City of Long Beach [CD+]
Mr. Gerald Miller
City Manager
333 West Ocean Boulevard, 13th Floor
Long Beach, CA 90802
Tel: (562) 570-6861

City of Long Beach [EIR/CD]
Administration, Planning and Facilities Bureau
Ms. Christine F. Andersen
Director of Public Works
333 West Ocean Boulevard, 9th Floor
Long Beach, CA 90802
Tel: (562) 570-6383

Long Beach Water Department [EIR/CD]
Mr. Kevin Wattier
1800 East Wardlow Road
Long Beach, CA 90807
Tel: (562) 570-2300

Long Beach Department of Health and Human Services [EIR/CD]
Mr. Ronald Arias
2525 Grand Avenue
Long Beach, CA 90815
Tel: (562) 570-4499

City of Long Beach Parks, Recreation and Marine [CD+]
Mr. Phil Hester
Director
2760 Studebaker Road
Long Beach, CA 90815
Tel: (562) 570-3170

Long Beach Department of Planning and Building [EIR+]
Ms. Angela Reynolds
333 West Ocean Boulevard, 7th Floor
Long Beach, CA 90802
Tel: (562) 570-3170

City of Long Beach Zoning Division [EIR+]
Ms. Carolyne Bihn
Zoning Administrator
333 West Ocean Boulevard, 7th Floor
Long Beach, CA 90802
Tel: (562) 570-6223

City of Long Beach Energy Department [CD+]
Mr. Jerry Wolfe
2400 East Spring Street
Long Beach, CA 90807
Tel: 562-570-2000

City of Long Beach
City Attorney's Office
Mr. Michael Mais
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802
Tel: (562) 570-2230

City of Long Beach [EIR/CD]
Department of Public Works, Traffic
Mr. Edward Norris
Transportation Bureau
333 West Ocean Boulevard, 10th Floor
Long Beach, CA 90802
Tel: (562) 570-5209

City of Long Beach
Ms. Laura Richardson
Council Person, 6th District
333 West Ocean Boulevard, 14th Floor
Long Beach, CA 90802
Tel: (562) 570-6816

11.1.6 Adjacent Cities

City of Lakewood
Mr. Charles Ebner
5050 North Clark
Lakewood, CA 90712
Tel: (562) 866-9771

City of Carson
Ms. Sheri Repp
701 East Carson Street
Carson, CA 90745
Tel: (310) 830-7600

City of Signal Hill [EIR/CD]
Mr. Gary Jones
2175 Cherry Avenue
Signal Hill, CA 90806
Tel: (562) 989-7300

City of Paramount
Mr. John Carver
16400 Colorado Avenue
Paramount, CA 90723
Tel: (562) 220-2225

City of Seal Beach
Ms. Kathleen McGlyn
211 Eighth Street
Seal Beach, CA 90746
Tel: (562) 431-2527

City of Bellflower
Mr. Brian Smith
16600 Civic Center Drive
Bellflower, CA 90706
Tel: (562) 804-1424

City of Cerritos
Mr. Ryan Carey
18125 South Bloomfield Avenue
Cerritos, CA 90703
Tel: (562) 860-0311

City of Hawaiian Gardens
Mr. Joe Colombo
21815 South Pioneer Boulevard
Hawaiian Gardens, CA 90716
Tel: (562) 420-2641

City of Los Alamitos
Mr. John Godoewski
3191 Katella Avenue
Los Alamitos, CA 90720
Tel: (562) 431-3538

City of Compton
Ms. Gloria Falls
205 South Willowbrook Avenue
Compton, CA 90220
Tel: (310) 605-5500

City of Los Angeles Planning & Building Department
Mr. Michael Davies
City Hall—Environmental Review Section
200 North Spring Street, Suite 763
Los Angeles, CA 90012
Tel: (213) 978-1366

11.2 OTHER PARTIES

Ms. Diana Mann
P.O. Box 30165
Long Beach, CA 90853

California Earth Corporation
Mr. Don May
4927 Minturn Avenue
Lakewood, CA 90712

Ms. Ann Cantrell
3106 Claremont
Long Beach, CA 90808

Southern California Edison
Mr. Steven Bradford
1924 East Cashdan Street
Compton, CA 90220

El Dorado Audubon Society
Ms. Carolyn Vance
President
P.O. Box 90713
Long Beach, CA 90809

Long Beach Memorial Medical Center [EIR+]
Mr. Pat Johner
2801 Atlantic Avenue
Long Beach, CA 90801
Tel: (213) 933-0567

Miller Children's Hospital [EIR+]
Mr. Richard DeCarlo
2801 Atlantic Avenue
Long Beach, CA 90801
Tel: (562) 933-1126

Miller Children's Hospital [EIR+]
Dr. Mel Marks
2801 Atlantic Avenue
Long Beach, CA 90801
Tel: (562) 933-8001

Todd Cancer Institute [EIR+]
Ms. Cathy Kopy
2801 Atlantic Avenue
Long Beach, CA 90801
Tel: (562) 933-0970

ADAMS Project Management Consulting, LLC [EIR+]
Mr. Jerry Oksner
1601 Cloverfield Boulevard
Second Floor, South Tower
Santa Monica, CA 90404
Tel: (310) 460-3366

Taylor [CD+]
Mr. Rick Savely, AIA
2220 North University Drive
Newport Beach, CA 92660-3319
Tel: (949) 574-1325

Turner Construction Company [CD+]
Mr. Bruce Nelson
555 West Fifth Street
Suite 3700
Los Angeles, CA 90013
Tel: (213) 891-3044

Cannon Design [CD+]
Mr. Marc Davidson
1901 Avenue of the Stars, Suite 175
Los Angeles, CA 90067
Tel: (310) 229-2700

Linscott, Law & Greenspan Engineers [CD+]
Mr. Richard Barretto
1580 Corporate, Suite 122
Costa Mesa, CA 92626
Tel: (714) 641-1587

VSA n Associates [CD+]
Dr. Mahabir Atwal
12525 Lambert Road
Whittier, CA 90606
Tel: (562) 698-2648

Memorial Heights
Ms. Maurice Knowles
3095 Elm Avenue
Long Beach, CA 90807
Tel: (562) 424-3678

SCS Engineers [CD+]
Mr. Ray Huff
3711 Long Beach Boulevard, 9th Floor
Long Beach, CA 90807
Tel: (562) 426-9544

Moffatt & Nichol [CD+]
Mr. Jim Faul
250 West Wardlow Road
Long Beach, CA 90807
Tel: (562) 810-3389

Wrigley Association
Ms. Maria Norvell
P.O. Box 16192
Long Beach, CA 90806
Tel: (562) 427-5021

Sunrise Boulevard Historic District
Ms. Polly Johnson
735 Sunrise Boulevard
Long Beach, CA 90806
Tel: (562) 427-6865

11.3 ADJACENT PROPERTY OWNERS

Patel Ishwarbhai & Maniben & Family Trust
2860 Long Beach Boulevard
Long Beach, CA 90806-1591

Arthur & Eleanor R. Howard
2789 Long Beach Boulevard
Long Beach, CA 90806-1519

Severance Stephen R. & Family Trust
1750 East Ocean Boulevard, Unit 1209
Long Beach, CA 90802-6020

Edward C. & Charmay B. Allred
3050 East Airport Way
Long Beach, CA 90806-2404

Blinn George & Patricia & Trust
1647 West Richard Place
Anaheim, CA 92802-1507

American Stores Properties, Inc.
P.O. Box 20
Boise, ID 83726-0020

Elliott Steven Y. & Family Trust
2865 Atlantic Avenue
Long Beach, CA 90806-1740

Ferraco Eric A. & Andrea V. & Family Trust
2933 Long Beach Boulevard
Long Beach, CA 90806-1517

Health Services Memorial
2801 Atlantic Avenue, #214
Long Beach, CA 90806-1737

Atlantic Medical Center, LLC
3450 Wilshire Boulevard, Suite 400
Los Angeles, CA 90010-2212

David C. & D. & S. Barden
12535 Seal Beach Boulevard, Suite 100
Seal Beach, CA 90740-2746

Joseph Grana
1657 Candlewood Drive
Upland, CA 91784-9176

Diane L. Horwood
P.O. Box 17656
Tucson, AZ 85731-7656

Phyllis L. Mckinney
1208 South Lemon Avenue
Walnut, CA 91789-4822

Gidden Family Trust
2808 Flangel Street
Lakewood, CA 90712-3733

L & B Real Estate
P.O. Box 1380
Los Angeles, CA 90078-1380

JCDS Properties, LLC
2690 Atlantic Avenue
Long Beach, CA 90806-2711

RMA Land, LLC
2750 Atlantic Avenue
Long Beach, CA 90806-2713

Schwartz D. N. & Family Trust
2650 Elm Avenue
Long Beach, CA 90806-1651

Patton James J. & Family Trust
2640 Colt Road
Ranch Palos Verdes, CA 90275-6505

Mitchwil Investments, LLC
2919 Gardena Avenue
Signal Hill, CA 90755-1914

Beachside Investments, LLC
4543 East Anaheim Street
Long Beach, CA 90804-3119

Brakin Family Trust
733 North Double Tree Lane
Long Beach, CA 90815-4712

Nancy N. Nguyen
500 East Willow Street
Long Beach, CA 90806-3115

Martha M. Arvey
1070 Parkview Avenue
Pasadena, CA 91103-2356

Two Willow Partners, LLC
P.O. Box 5034
Los Alamitos, CA 90721-5034

Desoto Natural Resources, Inc.
P.O. Box 2767
Long Beach, CA 90801-2767

Janich Properties, LLC
3939 Pacific Avenue
Long Beach, CA 90807-3229

S & P Investments
2650 Elm Avenue, Suite 205
Long Beach, CA 90806-1600

Salvation Army
30840 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275-5301

CREE Oil Limited
3250 Cherry Avenue
Long Beach, CA 90807-5214

11.4 OCCUPANTS OF THE PROPERTIES TO BE DEMOLISHED

Resident
2617 Pasadena Avenue
Long Beach, CA 90806

Residents
2609 Pasadena Avenue, Apartments #1-10
Long Beach, CA 90806

Resident
2632 Pasadena Avenue
Long Beach, CA 90806

Residents
2630 Linden Avenue, Apartments #1-9
Long Beach, CA 90806

Residents
2620 Linden Avenue, Apartments #1-4
Long Beach, CA 90806

Property Owner [EIR]
2641 Linden Avenue, Apartments #1-8
Long Beach, CA 90806

Resident
2633 Linden Avenue
Long Beach, CA 90806

Residents
2615 Pasadena Avenue, Apartments #1-4
Long Beach, CA 90806

Residents
2624 Pasadena Avenue
Long Beach, CA 90806

Residents
2638 Linden Avenue, Apartments #1-6
Long Beach, CA 90806

Residents
2622 Linden Avenue
Long Beach, CA 90806

Residents
2624 Linden Avenue
Long Beach, CA 90806

Residents
2641 Linden Avenue, Apartments #1-8
Long Beach, CA 90806

Residents
2613 Linden Avenue, Apartments #1-9
Long Beach, CA 90806

11.5 OWNERS OF THE PROPERTIES WITHIN A 300-FOOT RADIUS

27th Elm Equipment, LLC
320 East 27th Street
Long Beach, CA 90806

Property Owner
192 North Marina Drive
Long Beach, CA 90803

28th Street Leasing, LLC
2760 Atlantic Avenue
Long Beach, CA 90806

ACH
192 North Marina Drive
Long Beach, CA 90803

Edward and Charmay Allred
3050 East Airport Way
Long Beach, CA 90806

Glenn Almoite
214 East Columbia Street
Long Beach, CA 90806

American Stores Properties, Inc.
3146 Red Hill Avenue, #150
Costa Mesa, CA 92626

American Stores Properties, Inc.
P.O. Box 4349
Anaheim, CA 92803

Arnold and Pamela Anderson
3620 Claremore Avenue
Long Beach, CA 90808

Apro, LLC
17311 South Main Street
Gardena, CA 90248

Martha Arvey
1070 Parkview Avenue
Pasadena, CA 91103

Atlantic Medical Center, LLC
3450 Wilshire Boulevard, #400
Los Angeles, CA 90010

Bancap Medical Properties
192 North Marina Drive
Long Beach, CA 90803

David Barden
12535 Seal Beach Boulevard, Suite 100
Seal Beach, CA 90740

Donald and Bette Barden
12535 Seal Beach Boulevard, Suite 100
Seal Beach, CA 90740

Arturo and Juanita Barrera
P.O. Box 92228
City Industry, CA 91715

Justin and Louise Bartlow
1880 North College Circle
Long Beach, CA 90815

Clyde Bergendahl
2666 Elm Avenue
Long Beach, CA 90806

George and Paicia Blinn
1647 West Richard Place
Anaheim, CA 92802

Mario and Clara Brakin
733 North Double Tree Lane
Long Beach, CA 90815

Mario and Clara Brakin
2650 Elm Avenue, Suite 102
Long Beach, CA 90806

Burger King Corporation
P.O. Box 020783
Miami, FL 33102

John Cabe
1222 Central Avenue
Garden Grove, CA 92843

Virginia Campbell
1130 Batavia Avenue
Livermore, CA 94550

Mauriio Cappelletti
3120 San Francisco Avenue
Long Beach, CA 90806

Ernesto and Rosa Casillas
2558 Pasadena Avenue
Long Beach, CA 90806

Joe and Marilyn Chiu
114062 Montgomery Drive
Westminster, CA 92683

Mary Cloud
505 Cedar Avenue, Apt. #2-D
Long Beach, CA 90802

Cree Roseman Hillside Medical
3250 Cherry Avenue
Long Beach, CA 90807

DLC Enterprises
2650 Elm Avenue, Suite 215
Long Beach, CA 90806

Georges El Khoury
4543 East Anaheim Street
Long Beach, CA 90804

Steven Elliott
2865 Atlantic Avenue, #122
Long Beach, CA 90806

Eric and Andrea Ferraco
2933 Long Beach Boulevard
Long Beach, CA 90806

Elroy and Betty Fuller
P.O. Box 290
Dallas, TX 75221

Marilyn Gidden
2808 Flangel Street
Lakewood, CA 90712

Ben and Dorothy Goldman
1308 Pine Avenue
Manhattan Beach, CA 90266

William and Susan Goldsmith
3231 Mainway Drive
Los Alamitos, CA 90720

Joseph Grana
1657 Candlewood Drive
Upland, CA 91784

Hartley Medical Center
192 North Marina Drive
Long Beach, CA 90803

Sheila Herron
P.O. Box 7822
San Diego, CA 92167

Dean Hilburn
541 West 10th Street
Long Beach, CA 90813

Sylvia Horwood
P.O. Box 891149
Temecula, CA 92589

Sylvia Horwood
P.O. Box 4973
Houston, TX 77210

Arthur and Eleanor Howard
2789 Long Beach Boulevard
Long Beach, CA 90806

Ceverino and Maria Huiar
567 East Vernon Street
Long Beach, CA 90806

Istrate Family Partnership, LP
31878 Del Obispo Street, #11834
San Juan Capo, CA 92675

Janich Properties, LLC
3939 Pacific Avenue
Long Beach, CA 90807

JCDS Properties, LLC
2690 Atlantic Avenue
Long Beach, CA 90806

Sophorn Khoun
2570 Elm Avenue
Long Beach, CA 90806

Eugene Kirkpatrick
444 West Ocean Boulevard, #1616
Long Beach, CA 90802

L and B Real Estate
P.O. Box 1380
Los Angeles, CA 90078

LACMTA
261 East Willow Street
Long Beach, CA 90806

Solveig Lance
3145 Heather Road
Long Beach, CA 90808

Solveig Lance
2680 Atlantic Avenue
Long Beach, CA 90806

Ferdinand Lansangan
5 Reefer
Laguna Niguel, CA 92677

LB Self Storage, LLC
3229 East Spring Street, #300
Long Beach, CA 90806

Theodore Liebovich
131 South Fuller Avenue
Los Angeles, CA 90036

Pauley Petroleum, Inc.
P.O. Box 4274
Englewood, CO 80155

Phyllis Mckinney
1208 South Lemon Avenue
Walnut, CA 91789

Medical Equity I
2699 Atlantic Avenue
Long Beach, CA 90806

Medical Equity I
4401 Atlantic Avenue
Long Beach, CA 90807

Property Owner
2815 Long Beach Boulevard
Long Beach, CA 90806

Thomas and Raquel Perry
555 East Vernon Street
Long Beach, CA 90806

Mitchwil Investments, LLC
2919 Gardena Avenue
Signal Hill, CA 90755

Adrianna Mrochek
4135 East 15th Street
Long Beach, CA 90804

Nancy Nguyen
500 East Willow Street
Long Beach, CA 90806

Michael and Penny Niccole
16861 Coral Cay Lane
Huntington Beach, CA 92649

Ishwarbhai Patel
2860 Long Beach Boulevard
Long Beach, CA 90806

Patterson Street Leasing Co., LLC
2760 Atlantic Avenue
Long Beach, CA 90806

James Patton
2640 Colt Road
Rancho Palos Verde, CA 90275